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In This Issue

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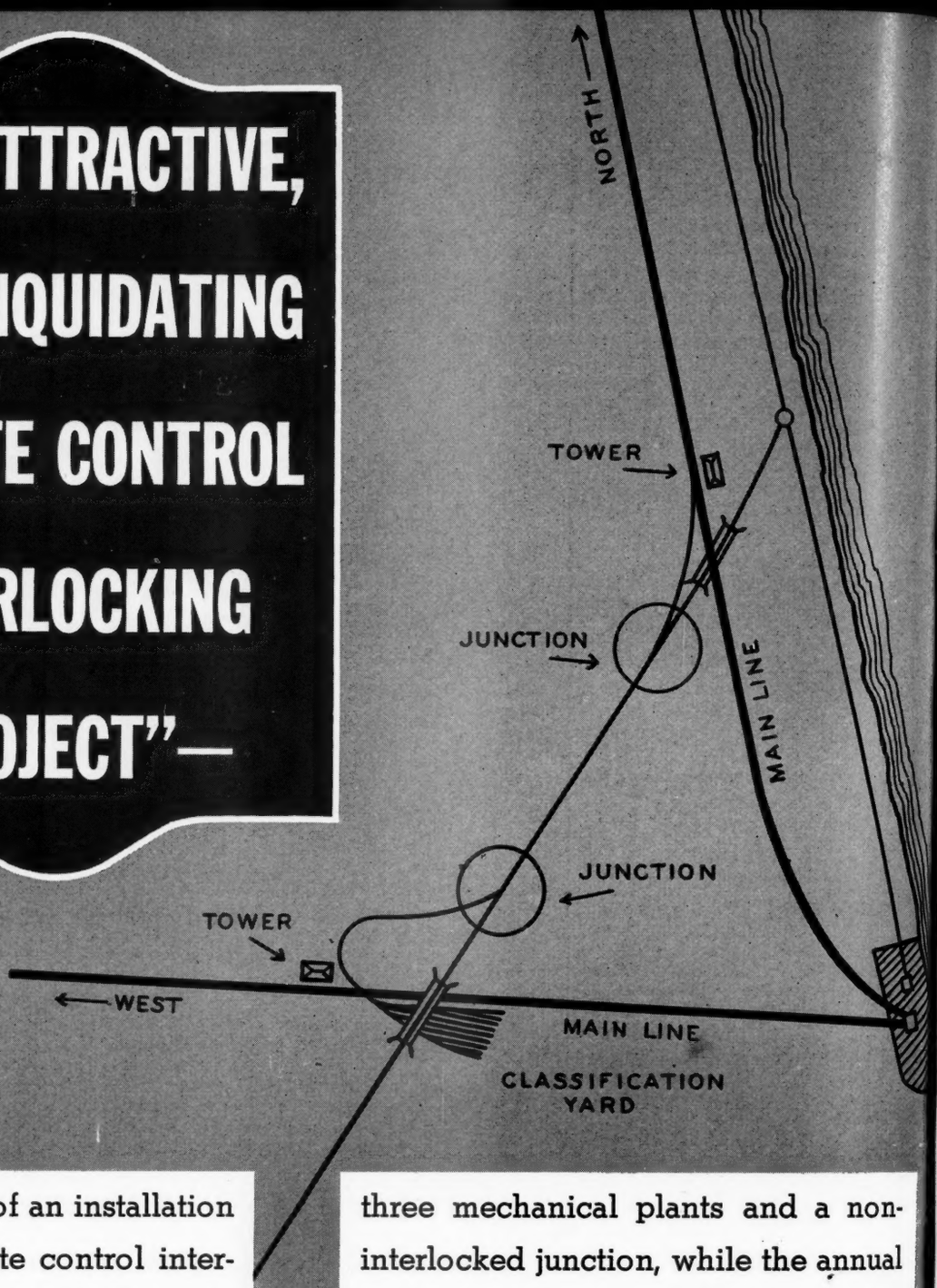
"AN ATTRACTIVE, SELF-LIQUIDATING REMOTE CONTROL INTERLOCKING PROJECT"—



—says *Railway Age* of an installation of two "Union" remote control interlockings. These two plants, although separated by ten miles of line, and, from an interlocking standpoint, in no way combined, are closely related in that they are both involved in the operation of an important cut-off. The two new remote control plants replace three mechanical plants and a non-interlocked junction, while the annual savings effected are 46 per cent for one plant and 33 per cent for the other, or a combined saving of approximately 40 per cent.

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RAILWAY AGE

Congress Has Not Yet Tackled the Real Railroad Problem

The railroads, their employees and the public owe a debt of gratitude to the chairmen and most of the members of the House and Senate Committees on interstate commerce for bringing as near to enactment as they did the several sound provisions for relief of the transportation crisis contained in the omnibus transportation bills (S. 2009) which have passed the two houses. The honor due these legislators for their intelligent and patriotic labors is the greater because they had to fight so hard for even the tiniest mitigation of the grip of predatory special interests on the socialized transportation plant of this country.

When Congress adjourned the railway situation was much worse than in the summer of 1933. And yet in the second quarter of 1933 the New Deal administration and Congress promoted and passed all the original New Deal "emergency" legislation, including an "emergency" railroad bill, while this year Congress, after considering transportation legislation at length, passed none of any importance.

In the second quarter of 1939 railway gross earnings were 148 million dollars larger than in the second quarter of 1933. But—owing to New Deal policies followed during the intervening six years—operating expenses and taxes were 188 million dollars larger. Consequently, net earnings were one-third, or 40 million dollars less. In the second quarter of 1933 the railways made net earnings at an annual rate of 1.98 per cent on their investment; in the second quarter of 1939 at a rate of only 1.35 per cent.

Railway Results—Second Quarters 1933 and 1939

	1933	1939	Increase or Decrease	Per cent Increase or Decrease
Gross Earnings...	$758,186,980	$906,352,437	+$148,165,457	+19.5
Operating Expenses (Incl. Rentals).	571,336,077	740,668,992	+ 169,332,915	+29.6
Taxes	67,633,157	86,229,270	+ 18,596,113	+27.5
Total Operating Expenses (Including Rentals) & Taxes	638,969,234	826,898,262	+ 187,929,028	+29.4
Net Operating Income	119,217,746	79,454,175	- 39,763,571	-33.4

Big Business and Politicians Prevent Railway Legislation

The failure to pass any helpful legislation this year, when it was needed more than ever before, was due to (1) the opposition of certain Big Business interests which profess utter devotion to private enterprise but showed they are much more immediately concerned about preserving socialistic transportation rackets by which they benefit, and (2) the fact that most politicians, regardless of party, are much more concerned about the *political* than the *economic* aspects of our great economic problems.

When President Roosevelt appointed the "Committee of Six" he promised to support any legislation it recommended—and then let his Secretaries of War and Agriculture, his Attorney-General and other representatives of his administration openly oppose legislation recommended by the committee. Republican leaders claim their party must be depended on to save the country from socialism; but there was as much division among Republicans as Democrats regarding proposals to reduce socialism in transportation.

Perhaps, however, it is as well nothing was done; for the real issue is whether transportation as a whole shall be made entirely *self-supporting private enterprise* or entirely socialistic; and any legislation that does not recognize and squarely face that issue will accomplish little or nothing.

What the conference report will be on this legislation, and what measures will be finally enacted, of course, remain to be seen. The fact must be faced, however, that no conference measure based on the bills which have passed the two houses of Congress will of itself do much to improve the position of the railroads. The carriers will still have to face most of the adverse conditions that they did before the committees on interstate commerce began their great labors. The situation of the railroads, even if the proposed legislation is finally enacted, will be pretty much that of a man who is suffering dangerously from anemia and is also attacked by mosquitoes. The proposed legislation will drive some (not all) of the mosquitoes away, but will leave unmitigated his more serious ailment.

The Real Competition with the Railroads—Taxpayers' Money

The principal achievement of the new legislation, even if finally enacted, with all its best present provisions, will be the regulation of some carriers by water. The immediate victory will be a largely moral one—a recognition of the principle that all carriers must be treated alike if the shipping public is to choose unhampered the most efficient for each transportation job. This will be an important achievement, however, because bringing all carriers under regulation will recognize a fundamental principle, failing which no order could ever

hope to be built in the area of competitive transportation. Equality of regulation is to orderly competition in transportation like drinking water is to a human being —alone it will not guarantee his continued living, and he will certainly not grow fat and prosperous on such a diet; but, on the other hand, he could not live at all without it.

Nowhere, however, in the legislation which Congress seems prepared to enact is there the slightest recognition that the serious competition which is ruining the railroads lies, not primarily in trucks and barges, per se, but (1) in the *socialized transportation facilities* which the government is supplying at an unprecedented rate for these trucks and barges to use and (2) in the rapidly-growing *private transportation* being rendered by pipelines, trucks and barges. If there had not been such a tremendous increase in highway and waterway facilities in recent years (constructed on the socialist principle of "production for use and not for profit"), there would not have been such a great growth of private transportation, and the job of regulating trucks and barges would be a much simpler matter than it has become. There cannot be any division of traffic among the various agencies of transportation along lines of true economy, so long as railways are built and maintained only to the extent that people who want to use them will pay adequately for their use as common carriers, while highways and waterways are constructed merely on an estimate of the probable "need" for them by users who will pay nothing for their use and who increasingly use them for the transportation of merely their own freight.

Estimating "Need" for Waterways and Highways

When the army engineers are estimating the "economic justification" for a proposed new waterway, they simply calculate how much tonnage will likely move upon it if nothing whatever in the way of compensatory tolls is charged. That is a purely socialistic test of "need." If that test were applied to the railways (i.e., the amount of new facilities they could keep reasonably busy if the taxpayers rather than their customers were paying for them), then there would be the greatest boom in railroad reconstruction and re-equipment that history has ever recorded. For one thing, all commuter trains would immediately be air-conditioned. Just think of the "need" for that improvement—if the railroads were permitted to gage "need" the way highway and waterway builders gage the "need" for new highways and waterways. And think of the railway tunnels and bridges that would be built and the grades and kinks which would be taken out of main lines and the new passenger terminals which would be put up—if the only test for making such improvements were a traffic estimate that the proposed facilities would be used with reasonable intensity.

Yet this is the only test which such government outfits as the Bureau of Public Roads make as to the "need" for new highways. Take, for instance, the Bureau's recent report on "Toll Roads and Free Roads" (which, incidentally, if its philosophy gains acceptance, may turn out to be the most effective document for the advancement of socialism since Marx published "Das Capital"). This report outlines (as Congress directed) a proposed system of 14,000 miles of toll highways, and then proceeds to show that the system would not attract enough paying traffic to meet maintenance and capital charges (allowing nothing for taxes on the capital investment).

If it were railroad improvements upon which the Bureau was estimating, its whole job would end with the discovery that insufficient paying traffic was available to justify the improvements. The project would be dropped and forgotten. But not so in the case of highways. **Having found that users do not want 14,000 miles of superhighways badly enough to pay for them, the Bureau proceeds to recommend that almost double that mileage of superhighways be built entirely out of funds provided by the general taxpayers.**

A Superhighway System Regardless of Cost

This new superhighway system, in the Bureau's own language, would "join the populous cities of the United States, almost without exception." (Of course, it is exactly between such populous centers that railroad facilities are most adequate—so what the Bureau proposes to do is not to supplement existing facilities or bring transportation to areas and people inadequately supplied with transportation—but rather to parallel a privately-owned transportation system with the costliest and most efficient socialized transportation plant that taxpayers' money can build. What investor would be damn fool enough to put a thin dime into the railroad business if such a non-toll-bearing superhighway system becomes the established goal of the federal government?)

Just consider what type of roads these gentlemen have in mind (again in their own words): "The reduction of excessive curvature; the flattening of heavy grades; an opening of longer sight distances; a general widening of pavement lanes; a construction of additional lanes and separation of opposing traffic where increased volume requires, and possibly also for the accommodation of slow vehicles on the heavier grades; the separation of grades at many railroad and highway intersections, and installation of protective cross traffic controls at others; the abatement of dangerous roadside conditions of all sorts; and a substantial improvement in the general directness of alinement between important objectives of the principal routes serving movements of the longer ranges."

Furthermore the Bureau does not plan to stop merely with high-speed rural roads; it contemplates carrying its superhighways right into the heart of all cities. According to its plans, a truck driver should be able to load up at the shipper's door in the middle of one city and proceed at full speed without stops or slow-downs

to the door of the consignee in the heart of some distant city.

All of this, if the Bureau's recommendation is followed, is to be provided without any plan to assess the users of these superhighways so much as an extra cent for them. Indeed, the Bureau recommends that the federal government increase the proportion it customarily pays toward highway construction "in view of the predominant national importance" of the proposed superhighway system. (The scheme has received the approval of the War Department, in the customary back-scratching courtesy of one government bureau to another—the alibi, of course, being "national defense," the same one the Army uses in canalizing the Missouri river up into the areas infested by the pesky redskins.)

Waterway Socialists Equally Active

Meantime, the waterway faction among the transportation socialists are just as active as the Bureau of Public Roads. The Senate has just put on ice until the next session a proposal to spend over 400 million dollars to further the program for canalizing practically every trickle of water in the country which has not already been dredged out to float the oil companies' barges.

Mr. Grocer, what luck would you have *selling* your goods if Uncle Sam were *giving away* groceries across the street to anybody who would come and take them? Or Mr. Clothing Dealer or Mr. Implement Manufacturer or Mr. Private-Business-of-any-kind, how long could *you* count on staying in business with this kind of competition—and, particularly, what would you think of your prospects if Uncle Sam were spending more and more of his resources to improve the quality of the goods he was *giving away* in competition with those you were trying to *sell*?

The situation of the railroads in the face of this kind of competition is just plain hopeless. The only chance of saving private enterprise in transportation lies in awakening the American people and the lawmakers quickly to see what conditions are, so that they may be corrected. We cannot long continue to have a form of transportation which must be supported by its users, if we are going to add indefinitely to a rival plant for the use of which the users pay nothing.

It is argued, to be sure, that the highways and waterways are "historically" free—and hence that no departure from traditional American principles is involved in the expenditures the government is making to improve these facilities. This statement is not true. Before the coming of the railway, when canals and improved highways were the principal reliance for transportation, it was the general practice to finance them by levying tolls upon their users. It was only when these facilities fell into disuse as truly economic arms of transportation that the practice of financing them socialistically by taxation was adopted. Now the highways and waterways have been revived as important agencies of transportation—but without reviving the tolls which used to pay for them in the pre-railroad era.

Either a Reversal of Policies —or Government Ownership

However, it is not a theory but a fact which confronts the nation with respect to transportation. No matter how many arguments people can think up to defend present highway and waterway construction and financial policies, nor how much justification may be offered for punishing the railways—the fact still remains that, while railways are indispensable to American economic life, they cannot be maintained out of private resources in the face of indefinite expansion of socialized rivals. Even if a certain modicum of socialism in transportation —say, the volume of it we had 15 or 20 years ago—were "historic"—it does not follow that the large amount of socialism in transportation we have today is "historic." Anyhow, no such theory will prevent the railroads from being starved into government ownership. A man might live a long time drinking a pint of whiskey a day—but if he suddenly increased his daily tipple to a gallon he would run into trouble; and that is what has happened with the development of socialized transportation in America.

So, Messrs. Wheeler and Lea and your hard-working colleagues, we thank you for a job well done—but submit that, as far as really solving America's transportation crisis is concerned, there is far more work lying ahead of you than to your rear.

Running Fast

The streamliners have proved, by means of their excellent safety record in five years of operation, that fast running is not necessarily hazardous if the motive power and the track are in good shape and if speed restrictions on curves are strictly adhered to. However, a series of recent accidents have shown that operation around curves at excessive speeds is still quite as dangerous as it ever was. Present speeds, unheard of in regular operations only a few years ago, have been built by running as fast as possible where fast running is safe, and exercising all necessary precautions at the danger spots.

What happens when this simple rule is not observed is illustrated by a recent accident. A train consisting of standard equipment reached a speed of 70 m. p. h. on a tangent a mile long. As it approached a 6 deg. 12 in. curve at the end of the tangent, the surviving members of the crew testify that little or no reduction in speed was made. A wayside sign is located 1,500 ft. from the curve, restricting the speed to 40 m. p. h. Failure to observe this warning caused the train to enter the curve at 20 to 25 m. p. h. faster than the safe speed, and not much slower than the estimated over-

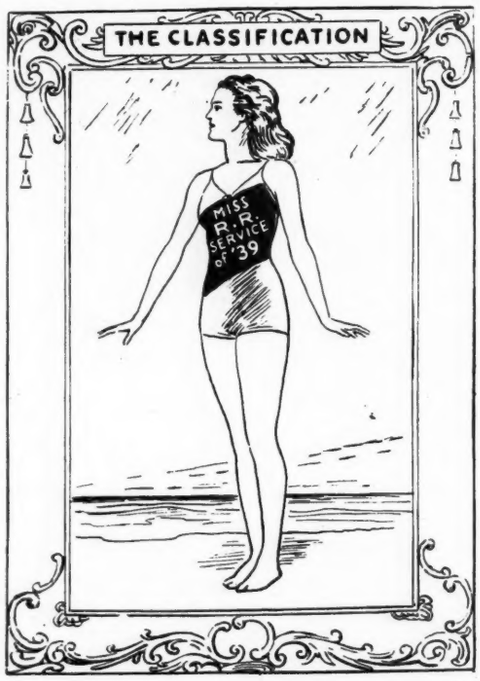
turning speed of 78 m. p. h., with the result that the engine and four cars were derailed, with deaths, injuries and extensive equipment damage following.

An inspection of the track on the curve presented an almost classic example of the effect on track of excessive speeds. Despite the fact that a super-elevation of 5½ in. was maintained on this curve, three rails on the high side of the track were found canted toward the outside, with the inside spikes pulled up from ½ in. to 3 in. and the outside spikes bent outward. Despite the adequate super-elevation for normal speeds, examination of the track indicated that the flange of the wheel on the high side mounted the rail and traveled on the ball of the rail for 20 ft. before dropping to the ties on the outside of the rail.

Before the days of the present high speeds it was not unusual for operating officers to overlook instances of excessive speed for the purpose of making up lost time, particularly when no accidents resulted. The speed limits then as now were set up with a definite purpose —to insure safe operation. The practice of overlooking speed violations was always dangerous and undesirable. Under modern operating conditions of high speed for both passenger and freight trains, speed restrictions have been raised to the maximum possible and rigid adherence is essential if accidents are to be avoided. Every superintendent, trainmaster and other operating supervisor is under a certain amount of pressure these days to get trains over the railroad as fast as possible. This does not mean, however, that the basic principle of safety should be overlooked or that speed violations should be given the tacit approval of operating officers. Today it is more important than it ever was to see that speed restrictions are complied with and that unsafe running, a most fruitful source of accidents, is eliminated.

What Will the Traffic Bear?—25

Apparently the Interstate Commerce Commission has become impatient at the disjointed and almost wholly unsuccessful efforts of the railroad industry over a period of several years to modernize their freight classification and class rate structure, and



A Modern Picture in an Old Frame Out of the Attic.

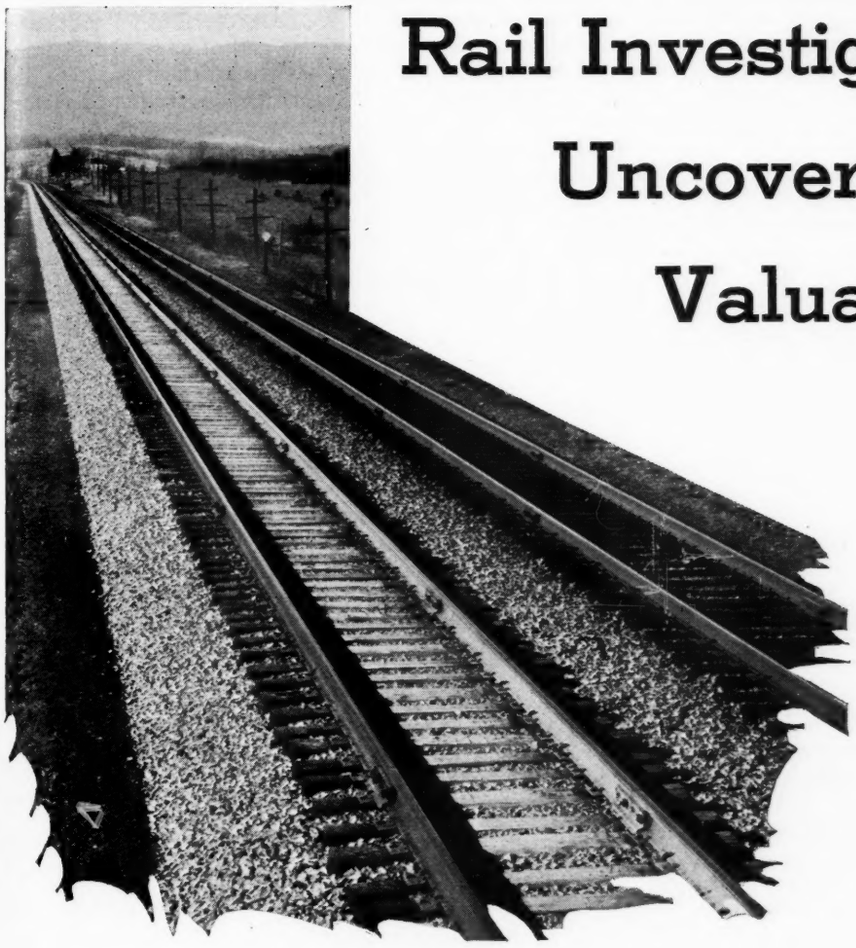
has now instituted an investigation in all the territory East of the Rocky Mountains "with a view to prescribing such rates and classifications as may be found to be justified."

No doubt this development will be welcomed by those who continue to think that the present rate structure is the nearest approach possible to a perfect science. The Commission and its officers have described the investigation as a large undertaking which will probably require several years, and that it will be some time before public hearings can be held because of the large amount of preliminary work necessary.

What could be more logical than for the *status quo* advocates now to argue that, since the Commission has instituted this investigation, the railroads should lay off and let the Commission to do the job? But to those who realize that the railroads are continuing to lose large amounts of tonnage in daily increasing amounts, such an outcome would be a calamity—condemning the railroads to at least a couple more years of chiseling competition.

The Commission urges that efforts now being made to revise class rate structures in the light of present conditions, and to simplify classifications, should proceed. There is no question among practical students as to what needs to be done, but *immediate* self-interest of a few who might lose some temporary advantage has thus far prevented any appreciable revision of the rate structure to meet realistically the competition from new forms of transportation.

What is needed is for each individual railroad to realize that its prerogatives are inferior to the welfare of the railroads as a whole and to that of the country as a whole. Prosperous individual railroads can be assured only if the industry as a whole has a chance to prosper. It is imperative that the railroads act unitedly to revise the rate structure in the best interests of the whole industry—that, for a while at least, they concern themselves with their common competitor, instead of sacrificing everything to their competition with each other. Unless they act unitedly, and promptly, they will find themselves far worse off when this investigation is finished than they are right now.



Rail Investigation Uncovers More Valuable Data*

By Dr. H. F. Moore

Research professor of Engineering Materials, University of Illinois, in charge of investigation

The fifth progress report on the study of rail failures, sponsored by the railways and rail manufacturers, shows that substantial progress continues to be made in an effort to produce rails free from internal defects and of the highest adaptability to present high speeds and heavy wheel loads. According to the report, proper controlled-cooling will eliminate the causes of transverse fissures; rail end-batter can be minimized by suitable end hardening by any of the commonly used processes; and the bend test for rail acceptance has certain advantages over the commonly used drop test.

THE genesis of an internal fissure, in a rail, whether transverse or otherwise, is nearly always, if not always, a shatter crack in the interior of the head of the rail. However, it must always be borne in mind that only a small percentage of shatter cracks develop into fissures. A shatter-cracked rail is not devoid of strength altogether. However, its strength is reduced, sometimes as much as 50 per cent. The search for the cause of and means of preventing shatter cracks has been a major feature of the investigation. Rolling-load tests have shown that the spread of a fissure is started not by bending stress, but by the complex localized stress directly under a wheel. The theoretical shearing stress at the end of a shatter crack, the strength of cracked rail-steel specimens developed in fatigue tests, and the wheel load found necessary to develop fissures in shatter-cracked rail specimens tested in a rolling-load testing machine, all fit into a consistent picture of the mechanism of the development of internal fissures in rails.

An extensive study of the prevention of shatter cracks by means of the controlled cooling of rails has been made, and the data resulting are included in the Fourth Progress report and in this report. Tests have been made on rails produced in the normal way and on rails produced from ingots through which hydrogen was passed while the metal was in the molten state. The hydrogen treatment produces a large number of shatter cracks, and was used on the assumption that if such serious shatter cracking could be prevented by controlled cooling, then the much smaller amount of shatter cracking found in some heats of rails produced in the normal way and cooled on the hot bed could also be prevented. Controlled cooling of the test heats of rails studied has been successful in preventing shatter cracks in both hydrogen-treated rails and rails produced normally.

Considerable study has been made of acceptance tests for rails. Bend tests, with autographic record of load and deflection, have given more consistent results for the detection of badly shatter-cracked rails than has the standard drop test. The drop tests, when used with the rail head-up, did not detect shatter cracks as well as did the drop test with the head down. Persistent at-

* Abstract of the fifth progress report on the Investigation of Fissures in Railroad Rails, as presented to the American Railway Engineering Association and published in Bulletin 411. Abstracts of the first four progress reports on the Investigation of Fissures in Railroad Rails were published in issues of the *Railway Age* of August 31, 1935, page 269; July 4, 1936, page 25; June 12, 1937, page 980; and July 23, 1938, page 160, respectively.

tempts have been made and are still in progress to find some non-destructive test for shatter cracks which can be applied to newly rolled rails. So far the results, while they have given some promise, have not developed a test usable in service.

A large amount of data has been accumulated on the strength, ductility and toughness of rail steel. Test data have been taken on rail steel at temperatures varying from –50 deg. F. to ordinary summer temperatures. The tests made have included tensile tests, fatigue tests (in repeated tension, repeated compression, reversed flexure and in reversed and repeated torsion), impact tests (flexure tests of notched and unnotched bars, and impact tension tests on unnotched bars), and static bending tests of notched bars with complete autographic load-deflection diagrams. Tests have also been made on the properties of rail steel heat-treated to varying degrees of hardness. Perhaps the outstanding feature of these latter tests has been the conclusion that with proper heat treatment it is possible to increase the strength, ductility and the toughness of rail steel and to diminish its sensitivity to low temperature effects.

Rail Punishment Analyzed

The question of the end hardening of rails has become a major factor of the investigation. Laboratory tests in a rolling-load machine have shown a marked diminution of end-batter for end-hardened rails. In a general way, hardening below about 320 Brinell does not seem to decrease the batter very much, while hardening above 450 Brinell is apt to make the steel so lacking in toughness that it chips easily. Thus far the rolling-load laboratory tests have not been sufficiently sensitive to differentiate between the various methods of end hardening, provided that the above range of Brinell hardness is maintained.

The problem of the severity of punishment which rails receive in practice has been studied by means of field tests in which the bending strain in rails under actual service was determined by the use of a DeForest scratch extensometer. These facts were reported on in the First, Second and the Third Progress reports. Records were obtained under some 500,000 wheel loads taken at four locations. The results of the tests indicated in a general way that at a given location about one wheel load in one thousand* might be expected to reach a value of about 40,000 lb. or higher.

The value of 40,000 lb. seems significant in view of the fact that 40,000 lb. was the lowest wheel load which, in the rolling-load testing machine at the laboratory, developed an internal fissure in a shatter-cracked test rail. In this connection it may again be noted that experiments showed that rail fissures were developed by the direct action of the wheel load rather than by the bending moment on the rail. Fissures were developed in test rails having a very small bending moment and attempts to develop fissures with repeated bending moment, without the direct application of heavy wheel loads at the points of maximum bending, were unsuccessful.

The test party of the investigation has kept in close contact with W. C. Barnes of the A. R. E. A. and his annual reports on fissure failures in service. Thus far the service reports from the detector car are in harmony with the conclusions that shatter cracks are the major cause of transverse fissures and that controlled cooling or other suitable thermal treatment is an effective means of preventing shatter cracks.

* Special experiments in the Talbot laboratory, University of Illinois, by Dr. R. N. Arnold, indicated that, owing to the inertia of the bending rail, this number should possibly be changed to a lower value. That is, that the 40,000-lb. wheel load occurred more often than the strains measured in the field tests would indicate.

Extensive metallographic studies and a considerable number of chemical analyses have been made in connection with the study of rail steel and of end-hardened and fractured rails. These studies have thrown light on the structure of steel, and have shown that rail steel is very nearly pure pearlite, with occasional traces of ferrite in that within the lower carbon range, and of cementite in rails within the higher carbon range. The studies have also shown rather definite traces of decarburization in the steel near the surface of the rails.

Controlled-Cooling Proved Effective

During the last year control-cooling tests of rail specimens have been made at two additional rail mills. In previous cooling tests it was necessary to use specimens from a large number of heats of rail steel and to take the chance that some heats would develop shatter cracks in the air-cooled or "control" specimens. This was a very unsatisfactory procedure due to the time and expense involved. A method of treating rail-steel ingots with hydrogen, to cause the rails rolled from those ingots to develop a large number of shatter cracks, was developed by H. B. Wishart and associates of the Metallurgical division of the Carnegie-Illinois Steel Corporation, Gary, Ind. This hydrogen treatment has been used on

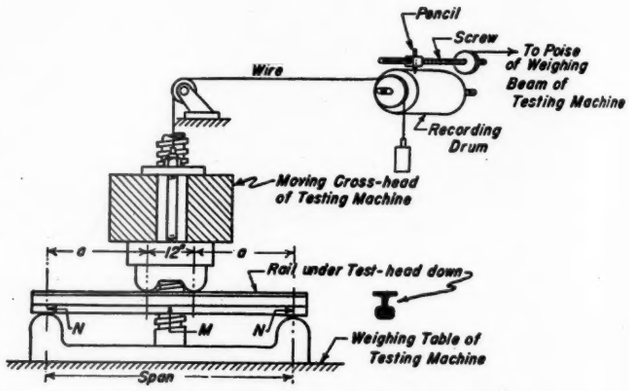


Diagram of Test Rig for Bend Tests of Rails

most of the rails employed in the cooling tests during the last year and has proved a valuable aid in such experiments, since in all cases where the ingots were properly treated with hydrogen the "control" specimens developed a large number of shatter cracks during cooling in air. The conclusions arrived at from the slow-cooling tests made can be summarized as follows:

(1) In the course of the cooling tests performed at three different steel mills only a few of the heats developed any shatter-cracked rails from normal ingots, even in specimens cooled in air from rolling temperature. However, the specimens from ingots in which hydrogen had been passed through the molten steel developed many shatter cracks in the specimens which were cooled in air.

(2) In the slow-cooling tests carried out at these three mills the test results showed some shatter cracks in certain of the air-cooled rail specimens, which formed between 400 and 300 deg. F. There was evidence that a still larger number of shatter cracks developed between 300 deg. F. and room temperature. The test rails in which shatter cracks developed at temperatures above 300 deg. F. were all from hydrogen-treated ingots of steel.

(3) Rail specimens, both normally produced and hydrogen treated, held for a sufficient time above 400 deg. F. did not develop shatter cracks, even if they were re-

moved from the cooling boxes at temperatures above 400 deg. F. A probable explanation of this is that if rails are held for a sufficient time at a temperature above that of the formation of shatter cracks, the causes of shatter cracks are eliminated.

(4) The higher the temperature at which the rails are held the less is the time required to eliminate the causes of shatter cracks.

(5) Placing rails in cooling boxes or holding them in a furnace at 900 deg. F. does not lower the Brinell hardness appreciably. Placing rails in cooling boxes packed with rock wool insulation, at 1,100 deg. F., lowers the hardness 5 to 10 Brinell numbers, while holding rails in a furnace at 1,100 deg. F. for 5 or 6 hours lowers the hardness 25 to 30 Brinell numbers.

Bend Tests for Rails

In connection with the detection of shatter cracks in rails the bend test has been studied and used in the course of this investigation. It has been considered as an acceptance test for rails for at least the last 20 years, but has not as yet received recognition by inclusion in any standard test used by the railroads. During November an informal conference was held in the Talbot laboratory at the University of Illinois, between the test party of the Rails Investigation and a sub-committee of the American Railway Engineering Association. At this conference the limitations of the present standard drop test and certain advantages of the bend test were brought out as summarized in the following:

The Drop Test

(1) As conducted at present the drop test is merely a "pass or fail" test, and gives little indication of the relative merits of different rails which pass the test.

(2) If the use of repeated blows to fracture a rail specimen were made a required test (instead of an optional test for information only), it would be possible to measure the total energy of drop only in "steps" of about 40,000 ft. lb. Moreover, after the first blow the specimen is so distorted that any accurate determination of stress or energy under succeeding blows is impossible, and the relative effect of successive blows and of one blow heavy enough to cause fracture is not known.

(3) In the standard M. C. B. drop-testing machine there is a large amount of energy absorbed in the springs supporting the anvil. The amount of this energy could be determined by measuring the deflection of the springs in each test, but that is not done, and it is probable that this energy in the springs varies with different machines. This energy is not absorbed by the specimen. If a rail of high elastic strength (an alloy steel rail) is tested, a decidedly brittle rail may pass the drop test. Within its elastic range a rail absorbs very little energy; the springs absorb most of the energy until the specimen begins to take permanent set. Thus most of the energy of drop of the tup may be absorbed by the springs.

(4) While it would be possible to modify the drop test by requiring the determination of the energy absorbed by the springs and deduct that amount of energy from the total energy of the falling tup, this would add to the complexity of the test procedure, and the impossibility of determining the resistance of the specimen except in wide "steps" of energy would remain.

The Bend Test

(1) From several experimental studies considerable evidence is available that a bend test using an autographic load-deflection record gives a measure of energy required for fracture not widely different from that given by a single-blow impact test to fracture, unless the speed of the striking hammer is much higher than that due to a free fall from a height of 22 ft. (height for M. C. B. drop test for 131-lb. rail). In the M. C. B. drop test the speed of application of stress to the specimen is further retarded by the time required for the deflection of the springs under the anvil.

(2) The bend test gives a measure of *strength* of the rail specimen (inch pounds bending moment, or pounds per square inch nominal stress in extreme fibre) which is *not* determinable from drop test data. Measurements of ductility (elongation on tension side of specimen) and of toughness (area under load-deflection diagram) are both determinable from the data of the bend test.

(3) The time required to make a bend test with a testing machine equipped with a powerful hydraulic pump or a high-power screw drive would probably be slightly greater than the time required to make a drop test. However, it should be noted that the long time required to make bend tests at the University of Illinois is due to the relatively low-power drive on the testing machine available there. The strength of a bend-test specimen can be determined directly from the autographic load-deflection diagram, and toughness (energy for fracture) can be determined readily by measuring the area of the diagram with a planimeter. In the bend test the deflection of the specimen is so large that no delicate measuring apparatus is required.

(4) The first cost of a bend test machine would be somewhat greater than that of a drop test machine, but it should be noted that the cost of a single-purpose bend test machine should be much less than the cost of a "universal" testing machine, such as the 600,000-lb. machine at the University of Illinois, or the one at Gary.

The bend tests made thus far in the investigation are to be regarded merely as a few preliminary tests. They indicate that bend tests of rails might well be made on specimens with a span of 4 ft., with possibly somewhat longer spans for rails heavier than 131-lb. per yard. To avoid the buckling of compression flanges when making head-down tests, it seems desirable to use a span not greater than 4 ft. 8 in. Also, when making head-up tests, it seems desirable to study methods of restraining the head from buckling. Using a 4-ft. span, it appears that deflections may be expected of an order of magnitude of about 6.5 in. This means that it will not be necessary to use any delicate deflection-measuring device. It seems that the loads required to cause fracture will have an order of magnitude of about 250,000 lb. for 90-lb. rails, increasing up to 450,000 lb. for 131-lb. rails. In view of this, it would appear that a bend-testing machine should have a capacity of at least 600,000 lb. If attempt is to be made to formulate specifications for a bend test, there should be consultation and, if possible, arrangements should be made with one or more steel mills to run bend tests along with drop tests for several heats of rails rolled by them.

Effect of Heat Treatment on Rail Steel

The application of the various hardening processes to rail ends to produce a hardened condition at these points to resist the battering action of traffic, involves essentially the practical application of the principles of heat treatment to rail steel. Any study then, which has for its purpose the determination of the most desirable mechanical properties to be attained in the hardened material of end-hardened rails, resolves itself into a study of the ef-

fect of heat treatment on the mechanical properties of rail steel.

Such studies could have been made by testing specimens machined from the hardened portions of rails end-hardened to cover a range of hardness by the various end-hardening processes. However, the extreme difficulty and expense of machining specimens from end-hardened rails, especially for the higher hardnesses, practically precluded this procedure as a feasible method of attack. Consequently, a laboratory method was adopted whereby specimens were cut from unhardened rails, heat treated to produce any desired range of hardness, and then tested to obtain surveys of the properties of the various specimens. The results of the tests made by this procedure can be summarized in the following:

The results of the tension test, the impact-bending and impact-tension test, and the impact-bending test for a temperature range of +70 deg. F. to —70 deg. F. all show that heat-treated rail steel loses strength, ductility and toughness rather suddenly in the range of Rockwell hardness from "C" 47 to "C" 52. This would indicate that the usable hardness of the heat-treated steel is exceeded when a hardness of approximately "C" 47 is exceeded.

As the material in end-hardened rails is rather carefully heat-treated, it seems reasonable to assume that the toughness in the end-hardened material would be subject to the same hardness limitations. In other words, it is indicated that the *upper limit* of Rockwell "C" hardness to be attained in end-hardening practice should not exceed a value of "C" 45 (or Brinell 415).

Heat-treated rail steel developed a good degree of toughness for hardnesses below "C" 45 at all testing temperatures. This would indicate that the lower limit of hardness for end-hardening practice would not be set by toughness considerations. The rolling-load tests (and service tests) indicate that the hardnesses in end-hardened rails below "C" 35 (or Brinell 320) are not effective in preventing wear and batter. Briefly then, the limits of hardness seem to be set on the high end by *toughness considerations* and on the lower end by *batter* and *wear considerations*. The laboratory tests at this time indicate a satisfactory hardness range between "C" 35 and "C" 45 (approximately Brinell 320 to 415).

Since the presentation of the fourth progress report, additional samples of end-hardened rails, together with their companion unhardened rails, have been tested in the rolling-load machine. While definite conclusions cannot be drawn from such a limited number of tests, it appears that a Rockwell hardness of less than "C" 35 (Brinell 325) cannot be expected to assure a satisfactory reduction in the amount of batter. All of the end-hardening processes appear to be effective in reducing batter, provided a proper hardness is attained.

The depths of the hardened zone produced by the various end-hardening processes used in these tests varied from about ¼ in. to the full depth of the rail head. The rolling-load tests, however, do not give any definite information concerning the depth of the hardened area necessary for satisfactory service. Some of the factors involved in any consideration of the desirable depth of hardened zone are: (1) The depth should be greater than the depth to the point of maximum shearing stress due to the direct action of the wheel load. This ranges from about ⅛ in. to 3/16 in., according to wheel load and wheel diameter; (2) the depth should be greater than the amount of wear permitted in the rail before it is removed from service; and (3) the depth should be greater than the amount of batter permitted before building up rail ends. In general, the first two items above will require greater depths than the third.

Probably the ideal condition for rail ends would be to have the hardness such that the batter at the ends is no greater than the wear on the unhardened part of the rail, and the depth of hardening greater than the allowable wear at points away from the joint. In such case the rail ends can be reconditioned by grinding off any small humps that develop near the joint.

In the fourth progress report of the investigation, a warning was given that no attempt should be made to evaluate the relative merits of the various end-hardening processes from the results of tests of relatively few joints in the rolling-load machine. Since the effects of speed and of a number of other factors are not present in the rolling-load tests, it is felt that the only logical basis for determining the desirable hardening methods to be used for preventing the batter of rail ends is to make service tests covering a number of end-hardening methods, using a sufficient number of rails end-hardened by each process to obtain a satisfactory average.

Silver Dollar Day at Purcell

Silver dollars are somewhat of a rarity in Oklahoma. Agent-Yardmaster Gross of the Santa Fe at Purcell decided that if all the Santa Fe employees at that point were to draw their pay in silver dollars and use this medium for paying their current expenses, people in the town would appreciate the value of the Santa Fe payroll.

"I wrote to our officials about the idea and they agreed it would be all right," Mr. Gross reported. "I called a meeting of all our employees here and went over the situation with them and asked them to cooperate in the plan. They were enthusiastic about it, and I went to the banks for their co-operation. They agreed to supply the dollars for the scheme, and on March 1 the plan went into operation.

"The banks shipped in a supply of silver. Each employee was asked to go to the bank and cash his pay check, taking as much silver as he expected to spend locally before the following pay day.

"It wasn't long until you could hear that silver jingling all over town. Every man, woman and child knew about those silver dollars and where they came from. Every business in Purcell received some of those dollars. They circulated into the country and as far away as fifty miles. Traveling salesmen took them to nearby towns carrying the story of the Santa Fe pay day.

"Merchants told me that long outstanding bills had been paid in silver. Bankers told me that employees who had never been in their banks before came in to get the silver. They were glad to meet these men, many of whom had previously cashed their checks at the various stores at which they traded. Taxes were paid with the silver, and I don't believe there is any activity in Purcell that did not get its share of this money. It certainly convinced the business men that Santa Fe pay rolls mean something here.

"Of course, the whole success of the scheme depended on the co-operation of our employees here. They gave me more than 90 per cent support with the plan. Even the merchants joined in the spirit and kept the money moving instead of sending it back to the banks. In the two months since the Silver Dollar Day Pay, only a small part of the money has come back to the banks. Those dollars are still carrying the Santa Fe story over the state of Oklahoma."

Adapted from the Santa Fe Magazine

What the Railroads Are Doing to Prevent Smoke*

Proper locomotive equipment, well-prepared coal, careful firing and a trained personnel are essential for best results in smoke abatement

By John Bjorkholm

Assistant Superintendent of Motive Power, Chicago, Milwaukee, St. Paul & Pacific

IN attempting to tell you what the railroads are doing to combat the smoke evil, perhaps you will bear with me if I go a little into past history and briefly review what they have already done. I believe it was Jack London who said that "The best place to begin is at the beginning," so I will begin by mentioning the brick arch as the first important step in combating the smoke nuisance. The purpose of the brick arch, as we all know, is to lengthen the flame-way, thus promoting improved combustion by giving the gases escaping from the fuel bed a better opportunity to ignite, thus not only aiding in the elimination of objectionable smoke but also materially aiding in the economical burning of the fuel. The locomotive firebox is, at its best, a crude furnace because the limitations in size necessarily surrounding a locomotive do not permit providing it with the scientific means of improving combustion that can be provided in stationary practice. Regardless of this, the locomotive designers, particularly in later years, have gone a long way to aid in combating an evil that we all must admit is a nuisance whether you look at it from the point of economy or the point of civic pride.

After the brick arch came several types of smoke-abating appliances, in every-day railroad parlance referred to as "smoke burners" or "smoke consumers" which, of course, are misnomers because smoke once permitted to form cannot be burned or consumed, at least not in an ordinary locomotive firebox. These smoke-abating appliances were of various kinds, some of them bearing convincing testimony that those who fathered them knew very little, if anything, about the problems of combustion; others telling a tale that at the best they might in some way function as smoke painters or aid in the whitewashing of smoke, but never reduce the objectionable properties in the smoke regardless of what its appearance might be when it leaves the stack. Some of these devices stood the test of time and, in one form or another, are still in use. The useful ones all have one principle in common, that of introducing air into the firebox through a number of openings known as combustion tubes, a steam jet usually being the mechanical means for the induction of air; this air introduced on top of the fuel bed usually aids materially in reducing the amount of black smoke escaping from the stack.

The next important step was the introduction of the combustion chamber. Improved grates was another item. Not so long ago it was felt that almost any kind of a grate was all right so long as it supported the fire bed and permitted enough air to enter the firebox to burn or at least partially burn the coal. Whether the amount of air admitted was in proper proportion to insure fairly complete combustion was something that was not given a great deal of consideration.

Education Plays an Important Role

Education, through supervision, is today perhaps playing a more important role in the efforts of the railroads to combat the smoke evil than any other one thing. The only thing a railroad has to sell is service. The best sales agency for this commodity is the goodwill of the public and in order to earn the goodwill of the public the railroads must be civic minded and in the efforts to gain goodwill the question of eliminating the smoke nuisance, as far as it possibly may be eliminated, is a matter of great importance.

I don't think I am unduly partial when I say that the

* Abstract of a paper presented at the June meeting of the Smoke Prevention Association, Milwaukee, Wis.

railroads as a whole have done as much if not more in the campaign of clearing up the atmosphere of our cities than any other large industry, taking all matters into consideration, and in this campaign of supervision and education, your association deserves the credit of being the leading agency taking a very prominent part. I am speaking from practical experience. When I was firing a locomotive many years ago I know I was always on the lookout for the smoke inspector because I knew if I permitted myself to get careless and allowed a lot of unnecessary smoke to escape from the stack, he would have me before the master mechanic the next morning and the less I saw of that gentleman, the better it was for me.

I recall Louis Doyle and Bill Knee, both former members of this association, who used to tell me how to fire in order to avoid bad smoke and, while I thought at first they were crazy, they soon convinced me that I did not know as much about smoke elimination as I thought I did. Their teachings were not only given to me but to hundreds of other firemen and as a result we all did a much better job, and thus both the railroad and the community were benefited.

Preparation of Coal

There is one item that perhaps more than anything else has contributed towards smoke elimination in later years and that is the proper preparation of locomotive coal at its source, a problem that has been recognized as a very important one and is being given considerable attention. In the past, almost anything that was black and would burn was considered good enough coal for locomotive fuel. This, of course, was an error. Today the railroads are insisting upon proper preparation of the coal at the mines, usually maintaining permanent inspectors where the coal originates, and exceptional care is taken by the mine owners to prepare the coal so that it is reasonably free from dirt and impurities, because we all know that a dirty clinkered fire through which the air cannot flow freely is not the kind of fire that promotes good combustion. The formation of clinkers is due to the fusion of the ash into a slag and is a very troublesome factor in proper firing. The dirt and impurities in the coal as a rule fuse at a comparatively low temperature and a clinkered fire prevents the air from flowing freely through the fuel bed; under those conditions it is a difficult matter to prevent objectionable smoke from forming, particularly if the coal is high in volatile matter.

Proper grading of the coal is also a very important matter because a mixture of extremely coarse coal and too much fine results in erratic firing, producing a heavy smoke. A high firebox temperature is one of the major factors aiding in smoke elimination and a high firebox temperature can only be obtained with coal of a reasonably good quality and preparation, particularly on locomotives that of necessity must cover a large mileage out on the road or remain in service for long periods in the terminal yards, thus creating a condition where the fire has a tendency to become heavy.

Enginehouses Often Prolific Source of Smoke

Perhaps the most troublesome sources of objectionable smoke are the roundhouses while locomotives are being fired up. In the past not much attention was paid to this source of trouble but this condition has been largely corrected. Some railroads at certain terminals have erected costly and elaborate plants of various types to overcome complaints from the authorities and at other points considerable attention is being paid to the firing-up process with existing facilities. Roundhouses were built years ago at locations which the railroads then thought were so far away from the residential districts of our cities that there would be no cause to worry about smoke in the future, but before long we found that the roundhouses were surrounded by homes in all directions and what was a comparatively bare country a few years ago, today includes fine, up-to-date communities.

As in the case of the locomotive while in actual service, supervision of the firing-up operations is the important factor in reducing the smoke evil. We must admit that this is perhaps the most difficult job in fighting smoke, but it is surprising the good results that can be obtained by a careful fire builder who has been properly trained. True, there will always be times when for various reasons a locomotive must be prepared in a hurry when some emergency that was not expected presents itself and a locomotive must be furnished suddenly. It is a troublesome problem under such conditions to avoid black smoke even though care is taken. Air, in addition to that entering the firebox through the grates, injected into the firebox on top of the fuel bed during the firing-up process has proved to be a fairly effective way of preventing the smoke from being too objectionable.

In recent years considerable attention has been paid to the elimination of certain roundhouses in order to concentrate operations as far as possible, at the larger and modernly equipped points. As a rule the old roundhouses where no improvements had been made to aid in the elimination of objectionable smoke were bad offenders not only so far as the locomotives were concerned, but usually such points also had old and frequently inadequate power plants with ordinary stationary locomotive-type boilers taxed beyond capacity, adding to the smoke inspector's troubles. If I am correctly informed, in Chicago alone, several hundred stalls have been eliminated in recent years and as the firing up of locomotives has thus been more concentrated at points with more modern facilities, this has materially contributed to a clearer atmosphere of their neighborhoods. The introduction of larger and more modern power in terminal service in recent years has also materially reduced the number of units in switching service. The reduction of engine units has thus simplified the problem of policing the operation which, in itself, has materially contributed to a better performance.

Clean Heating Surfaces Help

In the past, one of the difficult problems in connection with locomotive firing was dirty flues and flue sheets, the soot adhering to the heating surfaces constituting a very efficient heat insulator. As a result the fires had to be forced to a greater extent than necessary with clean heating surfaces; the more coal that is burned per square foot of grate area per hour, the more smoke of necessity will be the result. To overcome this condition, as far as it is possible on locomotives, modern engines are being equipped with soot blowers which can be operated while the locomotives are in service, thus keeping the heating surfaces comparatively clean.

We all realize that no matter what mechanical improvements are applied to the locomotive, we accomplish very little unless, through proper supervision and education, we can prevail upon the human element to function properly. I know you will agree with me, particularly those of you whose duty it is to walk through the railroad yards and observe the locomotives in operation, that it is at times discouraging to see glaring violations of the smoke ordinances and then to observe the fireman, the

minute he notices the smoke inspector, reach for the blower valve or the valve of the smoke abatement devices and then notice the stack immediately clearing up, demonstrating conclusively that there was no excuse whatever for the emission of objectionable smoke. It is our job to correct conditions of this kind and, while I am the last man in the world believing in drastic action being taken, there are times when no other method of handling the situation will do the job.

Former Tolerance of Smoke No Longer Justified

We are living in an era when conditions which were tolerated in years gone by no longer can be permitted. Not so long ago the railroads constituted the principal transportation agency and coal was, as a general rule, the only or at least the most convenient and economical means that could be converted into mechanical energy. We had not as yet learned to appreciate that mechanical power through the medium of steam could be created with as little smoke and dirt surrounding the operation as we have learned to appreciate today, and for that reason we did not object to the same degree that we do today when we observed the smoke clouds, whether they came from locomotives or from stationary boilers. Today we know that much of this smoke is not necessary and for that reason we should not tolerate unnecessary violations.

I do not want to leave the impression that coal-burning locomotives can be operated without smoke. We all know that there are times when, due to certain operating conditions, there is bound to be smoke and sometimes a lot of smoke coming from a locomotive stack when, for instance, all of a sudden the engineman perhaps unexpectedly, must close the throttle after having worked the engine at full capacity for some time, or when starting out with the firebox at a comparatively low temperature with a keen schedule ahead. Under such conditions there is bound to be smoke, but even under such adverse conditions the fireman, if he is on the alert and if he has been furnished the proper equipment, can do a job that would ordinarily be satisfactory and as a rule is not objected to by a practical inspector.

Exacting Service Requirements Introduce Problem

In full justice to the fireman, we must recognize that with the introduction of the very exacting service during recent years, his job has not been made easier. It takes full steam pressure right from the start and to the finish of the run to maintain the fast schedules of today and the fireman does not have the same opportunity that he used to have, when the schedules were slower, to build up his fire after he gets outside the smoke ordinance zone. Incidentally we have found that on locomotives carrying 200 lb. steam pressure, the lack of 5 lb. causes two minutes to be lost on the running time on the trains running on an 80-min. schedule between Milwaukee and Chicago. I am merely mentioning this to indicate how important it is that the fireman have his fire in such a condition that full steam pressure can be maintained during the entire trip. Today he must have his fire ready from the moment he gets the go-ahead signal as otherwise the locomotive will not meet the demands placed on it. On the super-fast schedules in vogue on many railroads today, every second counts if the train is to make its schedule and the railroads appreciate the tolerant attitude as a rule taken by the authorities whose duty it is to enforce various smoke ordinances in aiding the railroads to make these schedules possible.

In conclusion, perhaps you will pardon me if I venture to look into the future. As I have already mentioned, it is not so long ago when the steam locomotive was the undisputed king, not only in the transportation industry but in the stationary and marine fields as well. In the railroad industry, electrification had been introduced sparingly in this country but the electrified mileage was only a very small fraction of the nation's railroad mileage as a whole and, generally speaking, all cars whether passenger or freight were being propelled by steam. Even where electrification had been installed, the terminal switching, with some exceptions, was still handled by steam locomotives, because of the tremendous cost as well as lack of the proper clearances incidental to the overhead structure necessary for safe electric operation.

Internal-Combustion Engine Helps Reduce Smoke

This is the picture of the past and present, but in the picture of the future we can see an altogether new panorama unfolding itself before our eyes. The internal-combustion engine, and more particularly the Diesel, is challenging the steam locomotive for supremacy. Even though some of us who have spent a lifetime in close companionship with the steam locomotive, those of us who have learned to look upon it as something alive, something to nurse and caress, even though we may have cussed it at times and called it names that can be found only in the railroad vocabulary, must admit that the newcomer has many advantages and looks like a real competitor.

We are here primarily interested in the elimination of objectionable smoke and in that respect the Diesel engine has much to offer, although I predict that when its introduction becomes quite general, no doubt, the health department or the smoke inspectors, or whoever the agencies are, who today are listening to complaints from angry housewives or office managers of establishments adjacent to the railroad yards about objectionable smoke instead are going to listen to complaints from the same sources about objectionable, if colorless, gases from the Diesels.

The Diesel engine has been long in coming to the railroad industry in the propulsion of cars, although for years it has demonstrated its economy and reliability in stationary and marine practice. Its forward march during the last few years, however, has been almost phenomenal. It has been introduced in passenger service, handling some of the finest and speediest trains on the continent and its introduction in terminal switch service in the last year or so has almost attained wholesale proportions. As yet they are costly in initial investment and can only be justified where service conditions require that the Diesels be worked to a high point of utilization.

As the demand for this type of power becomes greater, however, and the production becomes higher, it is reasonable to believe that the cost will be reduced and I am looking forward to the Diesels replacing a large number of steam locomotives in the near future. This in itself will go a long way toward solving the problem of objectionable smoke. However, all this is not going to happen tomorrow, no matter how desirable it may be, because it involves a tremendous outlay of money. In the meantime, steam, the useful servant of mankind since the days of Watt, will still be with us rendering useful service and whether the source of energy will be coal or oil, I feel confident that the railroads will continue to co-operate with the Smoke Prevention Association in our common cause of eliminating objectionable smoke, as far as possible.

A. N. Williams Elected Lehigh Valley's Chief Executive Officer

Albert N. Williams

ALBERT N. WILLIAMS, who has been president and general manager of the Chicago & Western Indiana and the Belt Railway of Chicago, with headquarters at Chicago, since March, 1932, was elected executive vice-president and chairman of the board of the Lehigh Valley at a meeting of the board of directors held in Philadelphia, Pa., July 26. Effective August 1, he assumed the duties of chief executive officer which have temporarily been under the jurisdiction of Richard W. Barrett, vice-president and general counsel, during the absence of Duncan J. Kerr, president, on account of illness. Mr. Kerr will continue as president of the company, but his illness will prevent active duty for the present.

Mr. Williams is primarily an operating man, having arrived at his present executive responsibilities via the trainmaster-superintendent-general manager route. His years of experience in operating work directly is bottomed, however, on academic training in engineering at Yale University's Sheffield Scientific School (summer vacations and early post-commencement years devoted to getting acquainted with the railroading in varied activities ranging from mechanical department experience as machinist's apprentice to roadway service as section and extra-gang foreman). The versatility of these early years has never been lost; Mr. Williams speaks to roadmasters on their own ground and has plenty of ideas with respect to modern rolling stock needs. This, coupled with a gift as a public speaker, has placed him in demand for meetings of railroad professional societies, covering both operating and engineering fields.

The most outstanding achievement in Mr. Williams' career may be said to have been the modernization of the "Belt," both in physical plant and train movement, whereby it played a major part in the great freight "speed-up" of late years. In the competition between Chicago terminal roads for "bridge" traffic, there has developed a system of expedited schedules for inter-yard movements having no parallel elsewhere, and in this development, the Belt has played a leading role. Its hours of receipt and delivery with some 22 carriers are published in the manner of passenger runs; its re-icing, poultry and live-stock feeding facilities advertised with the air of a Cook's tour brochure.

To make possible this service, the Belt Railway, under Mr. Williams' direction, began in 1936 to revolutionize its operations. Chief of basic physical changes was the modernization of the road's nerve center—Clearing yard—in 1937 and 1938 to increase its capacity at peak hours and eliminate long detentions of cars. Whereas, in previous years, cars were allowed to pile up until the number to a particular connection justified a train, the Belt now operates scheduled transfer runs directly between the respective yards of its connecting trunk lines and between their yards and Clearing. The road has also instituted a last-minute delivery service whereby cars destined for road trains are inspected before departure from Clearing and delivered to connections ready for road haul.

In his direction of both the Belt and the C. & W. I., Mr. Williams reorganized his operating staff to include young and aggressive men to push the overhauling program he laid out.

To the Lehigh Valley, then, the new executive officer brings an intimate knowledge of terminal problems and the campaign to transform yards from "detainers" to "expediters." Both on the Midland Valley (where he was general manager in the early 'Twenties) and the Belt, he was concerned with the peculiar obligation of the intermediate carrier to adapt its operations to the necessities of its connections. While the Lehigh is not customarily classed a "bridge" road, many of its movements are terminal or connecting in character, especially in the New York, Bethlehem, Pa., and Wilkes-Barre areas. The problems of its expedited high-class freight traffic between New York and Suspension Bridge, N. Y., should also attract a man of Mr. William's background.

Mr. Williams, as noted above, believes strongly that supervisory officers should continually watch for "new blood," even for lower-rated jobs. In his public ad-

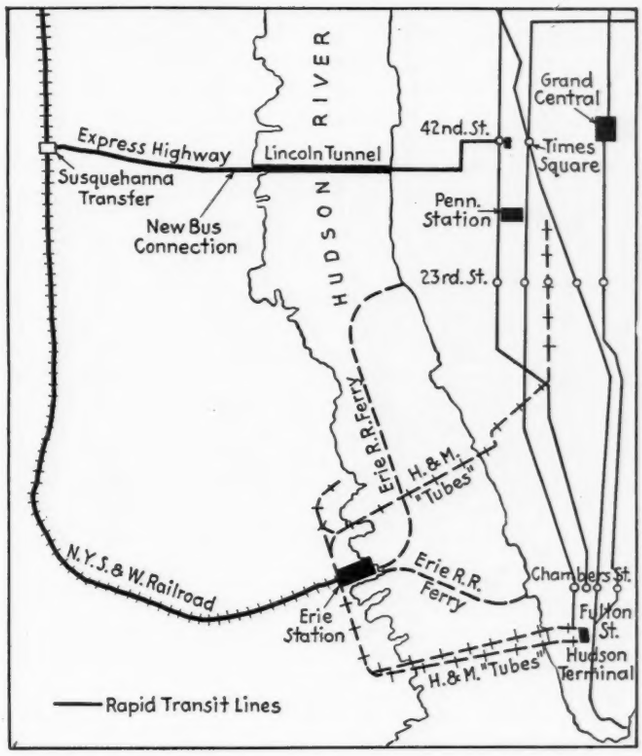
dresses a favorite theme has been the need for officers to watch for promising men in their territories, interest them in railroad service and develop them for responsibility so that when replacement is necessary "you have your own men ready and trained to fill these positions."

Mr. Williams was born in Denver, Colo., on June 14, 1888. He first entered railway service in 1906 as rodman with the Denver, North Western & Pacific (now Denver & Salt Lake) during his summer vacation from study at Yale University, and during the summer of 1907 served as a machinist's apprentice with the Denver & Rio Grande (now D. & R. G. W.). In 1910 he was graduated from the Sheffield Scientific School, Yale University. After graduation he served with the Union Pacific as brakeman, section foreman, extra gang foreman, timekeeper and other "orientation" positions until May, 1912, when he became inspector of equipment with the same road. Three months later he became trainmaster and superintendent with the Missouri, Kansas & Texas. In 1914 he became trainmaster of the Chicago, Rock Island & Pacific, returning to his old post as trainmaster of the Missouri, Kansas & Texas in 1916. Mr. Williams left railroad service temporarily in March, 1917, to engage in the petroleum industry at various points in the United States and Mexico. He returned to railway service in 1921 as assistant general manager of the Midland Valley, and a year later, took over the general managership of the same road. In March, 1926, he became special representative in the office of President Jaffray of the Minneapolis, St. Paul & Sault Ste. Marie, where he was engaged in special assignments. In March of 1927 Mr. Williams became general superintendent of the road, which position he retained until his election as president and general manager of the Chicago & Western Indiana and the Belt Railway of Chicago in March, 1932, succeeding E. H. Lee, retired.

N. Y. S. & W. Offers Bus Service to Commuters

EFFECTIVE August 1, the New York, Susquehanna & Western inaugurated an express motor bus service between its railroad line at North Bergen, N. J., and Times Square, in the heart of New York's Manhattan, enabling passengers on inbound and outbound commuting trains with mid-town destinations to save from 25 to 30 minutes as compared with the previous method available for reaching these points.

This is the first move on the part of a road with railhead on the New Jersey shore to provide direct service for commuters to mid-town Manhattan. In recent years there has been a partial "migration" of business firms from the lower end of the Manhattan island to the so-called "mid-town" section between 34th and 50th streets. Since the New York, Susquehanna & Western, which serves Northern New Jersey, operates into the Erie station opposite the lower end of Manhattan, before the introduction of the new bus connection commuters employed in mid-town offices had, in effect, to "back-track" uptown via one of the following routes after detraining in Jersey City, as is clear from the accompanying map: (1) Erie ferry to Chambers street and walk to nearest station of northbound rapid transit lines, (minimum five cents fare additional to railroad fare); (2) Hudson & Manhattan "tube" to Hudson terminal and change to rapid transit lines (minimum of 13 cents fare additional); or, (3) Hudson & Manhattan uptown line to 34th street



Map Shows Route to Mid-Town New York Via New N. Y. S. & W. Bus Connection Contrasted with Present Routes Via Ferries or "Tubes" and Rapid Transit Lines

with change to rapid transit trains (minimum of 15 cents extra fare).

The new bus service is offered at a flat fare of 15 cents in each direction from "Susquehanna Transfer" at North Bergen to New York stations. Using this route commuters will thus pay ten cents more than via route (1), two cents more than via route (2) and the same fare as via route (3). On the other hand, their time by bus between Susquehanna Transfer and Times Square is scheduled at 15 min. as compared with 30 to 45 min. between the two points via railroad to Jersey City plus any of the three routes above.

Buses connecting with five inbound commuters' trains in the morning and five outbound in the evening operate via an express highway and the Lincoln vehicular tunnel directly from the Transfer to New York. Schedules call for seven minutes running time between the N. Y.

"Susquehanna Transfer" Is Sheltered by the Express Highway Approach to Lincoln Tunnel. Ramp at Left Affords Easy Connection for Railroads' Buses

S. & W. station and the mouth of the tunnel at Dyer and 40th streets, New York, with eight minutes additional allowed to run over city streets to the bus terminal located on 42nd street, a half block west of Times Square. Public Service Interstate Corporation is operating the buses under a contract which calls for city-type vehicles seating a minimum of 30 passengers; the railroad may specify buses seating up to 38, if traffic warrants.

To avoid possible competition with established bus lines operating between New York and the vicinity of North Bergen, the connection service is being offered only to Susquehanna passengers. On inbound runs N. Y. S. & W. conductors sell single-trip bus tickets for 15 cents to holders of any type of railroad ticket reading "New York," and bus drivers honor such tickets exclusively. On the outbound trip bus drivers sell the connection tickets to holders of railroad tickets destined for points on the Susquehanna; to those destined for points on the Susquehanna but who hold no railroad transportation, bus drivers sell a single bus fare *plus* a credit slip for 25 cents, the latter being good for 10 cents cash upon purchase of railroad transportation aboard the train.

To facilitate the transfer of passengers between trains and buses the railroad has, at a minimum of cost, set up a transfer point about 1150 ft. south of its regular North Bergen station, at a point along the tracks sheltered by a 60-ft. wide elevated highway which crosses the railroad at right angles.

A two-lane macadam roadway with center grass-plot has been built in from state highway route No. 1 (paralleling the railroad 350 ft. to the east) ending in a circular, trackside loading area. From route 1, easy ramps give access to the express highway approach to the tunnel.

At "Susquehanna Transfer" the N. Y. S. & W. is directly adjacent to the Northern of New Jersey, both roads being double-track. The eastbound main serving both roads is track 2 of the Susquehanna while the westbound main is track 1 of the Northern, the outside tracks of each road thus left being used for switching. Since the Northern lies between the N. Y. S. & W. and the roadway, its switching track has been taken out of service for a distance of 390 ft. and walks built over the rails to afford entraining passengers access to northbound trains on the adjacent track. The walks extend further across the narrow strip separating the rights-of-way and lead to a paved area along the eastbound main for detraining passengers.

These paved platforms are long enough to protect three cars and the railroad has requested passengers using the bus service to sit in the last three coaches of each train which will be stopped at the transfer area. The entire transfer point is sheltered by the overhead highway viaduct. No building or agent is required as the transfer takes but a fraction of a minute.

The Susquehanna carries about 2,400 commuters daily, of which over 300 have mid-town destinations, according to a questionnaire survey. The territory it serves is laced with a network of interurban bus lines entering New York via the George Washington Bridge or the Lincoln Tunnel, which have been attracting increasing numbers of commuters. The fastest all-bus run between Paterson and Times Square via the Lincoln tunnel consumes 1 hr., 5 min., as compared with 35 to 40 min. via N. Y. S. & W. and the new bus connection. The 50-trip tickets sold by the bus lines between Paterson and New York average 25 cents per trip as compared with a total of 35 cents per trip with the N. Y. S. & W. 46-trip ticket plus the 15-cent connection bus fare.

I. C. C. Launches Rate and Classification Probes

WASHINGTON, D. C.

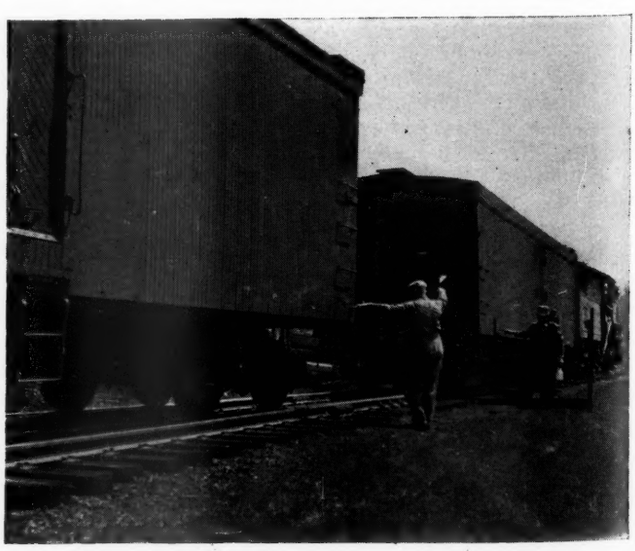
GENERAL investigations of class rates and freight classifications of rail and water carriers subject to the Interstate Commerce Act have been instituted by the Interstate Commerce Commission on its own motion in orders dated July 29 and made public on August 1. The investigations which the notice from I. C. C. Secretary W. P. Bartel says will comprise "a large undertaking," is interpreted as a commission move to deal with current conditions wherein various all-commodity and all-freight rates proposed by the railroads to meet the competition of motor trucks would progressively undermine the class rate structure and classification.

Lately the commission has been condemning all-commodity and all-freight rates, and suggestions have been heard to the effect that the natural way to deal with the questions thereby raised would be the institution of class rate proceedings. The rate probe has been docketed as No. 28300, Class Rate Investigation, 1939; while the classification case is docketed as No. 28310, Consolidated Freight Classification. The former, Secretary Bartel's notice points out, will cover "class rates, rail and water, applicable in the United States generally, except in mountain-Pacific territory and on transcontinental traffic." Both investigations will be "with a view to prescribing such rates and classifications as may be found justified."

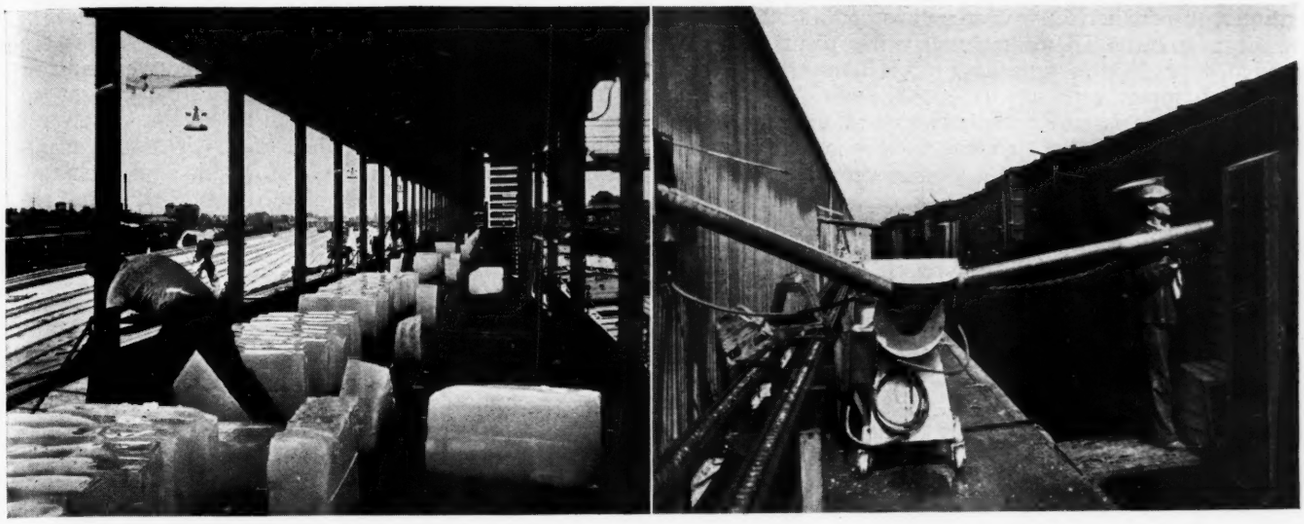
The investigations, Secretary Bartel went on, will necessarily "take time not only in preliminary work by the commission's own forces, but in preparations by parties desiring to be heard." Thus the hearings will perhaps not be set for an early date. "In the meantime," he added, "efforts now being made by carriers' and shippers' organizations to revise class rate structures, in the light of present conditions, and to simplify classifications should proceed. To the extent that these efforts are successful the magnitude of the task confronting all concerned in these investigations will be decreased." This reference is to current activities of special sub-committees of the Traffic Advisory Committee of the A. A. R.

The proceedings have been assigned to the commission's Division 2, which, under the new set up established July 1, handles rates, tariffs and valuation; its members are Commissioners Aitchison, Splawn and Caskie.

* * *



Tying on Another Carload. Up Country on a New York-Bound Milk Run of the New York, Ontario & Western



Two of the Types of Icing Used—Left: Bunker Icing; Right: Blowing Crushed Ice Into Cars for Top Icing

How the Southern Pacific Handles Fruits and Vegetables

Many problems involved in moving the vast transcontinental perishable traffic

DURING 1938, more than 5,000 freight trains were required to move the fruits and vegetables of the Pacific Coast to the nation's markets, many of them nearly three thousand miles from the principal producing areas in California, Oregon and Arizona. Grape shipments from these states amount to approximately 98 per cent of the country's total production; lettuce, 95 per cent; canteloupes and similar melons, 79 per cent; citrus fruits, 57 per cent, including 100 per cent of the lemon shipments; vegetables, 26 per cent, including most of the asparagus, carrots and cauliflower and about half of the celery and peas; and deciduous fruits, 25 per cent, including more than half of the pears and cherries.

What this means to the Southern Pacific is indicated by the revenues derived therefrom. On the Pacific Lines of the S. P., more than 23 per cent of the gross revenues come from perishable shipments. The S. P. has always realized the responsibility involved in serving this great industry and has done much to foster its growth. The organization for handling this volume of traffic on time is complex and based upon years of experience in moving perishables. The operating methods vary in details only, in handling the various fruits and vegetables.

The Pacific Fruit Express

Sharing the responsibility with the S. P. for the expeditious handling of perishables is the Pacific Fruit Express, a company organized by the S. P. and the Union Pacific in 1906, during the infancy of the industry, and which is today the largest operator of refrigerator cars in the world. The function of the P. F. E. is to supply refrigerator cars and protective service—refrigeration or heating. For the construction, rebuilding and repair of cars, it operates modern shops at Roseville, Cal., Los Angeles and Colton, at Tucson, Ariz., Nampa, Idaho, and Pocatello, and at New Orleans, La.

When the P. F. E. began operations in October, 1907, it owned 6,600 cars and during its first year it handled 48,902 carloads of freight. Today, it has 39,573 freight and 298 express cars in refrigerator service, and, in 1936 it originated 339,336 carloads of perishable commodities for its contracting railroads, the Southern Pacific, the Union Pacific and the Western Pacific. Its record year was 1930, with 378,422 carloads including great quantities of grapes from California.

During 1936, the P. F. E. spent more than $20,000,000 for refrigerator cars to be used in handling California's perishable traffic. This sum represents the purchase in April of 2,700 cars at a cost of $10,000,000, the purchase of 2,000 additional cars in December, at $7,800,000, and rebuilding 1,750 cars, at a cost of $2,715,000 in the company's shops at Roseville and Los Angeles. This is typical of the huge expenditures of all kinds that the railways have made in building up this industry to its present size.

The P. F. E. now employs more than 3,000 persons during the peak seasons, and has general offices in San Francisco, with eastern headquarters in Chicago. There are important offices in many other cities, and agencies at the principal receiving points in the East and in the loading territories of the West.

In its early years, the P. F. E. had to depend almost

entirely on commercial ice companies for its ice supply but it now owns 18 ice manufacturing plants, with a combined production capacity of 5,560 tons daily, and combined storage capacity of 330,900 tons. The largest of these plants is at Roseville, which is the largest of its kind in the world, having a daily manufacturing capacity of 1,300 tons, and a storage capacity of 53,000 tons. The P. F. E. also has natural ice plants at Carlin, Nev., Laramie, Wyo., and North Powder, Ore., where ice is harvested from artificial lakes in the winter months and stored for summer use. These three plants have a combined storage capacity of 141,800 tons.

In addition to the above, the P. F. E. owns 45 icing platforms where ice is purchased from commercial ice companies or shipped from some nearby P. F. E. plant. The combined length of these platforms and those adjacent to P. F. E. plants is 97,394 ft., or about 18½ miles, which would accommodate some 3,750 cars at one spotting. Most of these platforms are of the island type, permitting the icing of cars from both sides at the same time. Car icing is also done at 190 points on the S. P. and U. P. other than those mentioned.

New Icing Methods

The quantity of ice used now is not as huge as it was a few years ago, when practically all perishables moved under "standard" refrigeration, which required icing at every regular icing station enroute. In 1929, P. F. E. refrigerator cars consumed 2,283,294 tons of ice. With the modification and development of icing methods, such as "top icing," which have been described previously in the *Railway Age*, the consumption of ice by the P. F. E. has been materially reduced, amounting to only 1,299,965 tons in 1936.

The perishable business is, of course, seasonal to a certain extent, but because of the wide variety of crops and the differing climatic conditions in the vast area served, the moving of fruits and vegetables provides an all-year job for the railroads and the P. F. E. A crop of major proportions is harvested somewhere in the territory every month, and fruits and vegetables move from California to eastern markets every day in the year.

Car Supply

To insure an ample car supply, regardless of how fast the produce may ripen or other emergencies arise, railway and car company observers are constantly in the field, making crop surveys and securing information from shippers and from government and perishable association experts as to when the crops will start to ripen, what their extent will be, when the peak will be reached and how the supply of cars must be spaced to meet the demands. Even so, sudden changes in weather or in the market conditions may disrupt the most careful plans, and the railway must be ready to meet emergencies at any time.

The perishable trains must move on fast schedules, and the continuing record of several years of over 98 per cent of such trains handled on time or ahead of schedule must be maintained or improved upon. The principal perishable shipping areas are zoned and perishables loaded in these zone areas before the established closing hours are invariably given first-day departure from the concentration points for that zone, with seventh morning arrival in Chicago and ninth evening arrival in New York. This rapid movement from the gathering areas to the concentration points is taken care of by a set-up of switching runs in the producing areas that is the result of many years of experience.

To provide a dependable and uniform freight service, transcontinental and other through perishable trains are operated on definite schedules. An extensive manifest system is maintained on all transcontinental freight, so that the shippers and receivers may be kept closely informed of the progress of their cars. The first manifesting station gives complete information on each carload of freight to offices in all districts which are concerned in the movement, and assigns a number and a symbol which are thereafter used to identify the trains at subsequent passing stations, to reduce telegraphing to the minimum. If, because of becoming bad order or for some other unavoidable cause, a car is set out of an identified train, a set-out report is issued at once, so that the shipper may be informed of the delay and the reason therefor.

A central manifest bureau which co-ordinates the working of the manifest system all over the system is maintained in San Francisco. Complete records are kept of every manifest car on the railroad, as well as special telegraphic reports of all non-manifest freight which is destined to the Los Angeles and San Francisco Bay areas.

Diversions

Not only are these perishables handled on fast schedules and given protection from the weather, but they are frequently diverted on their way east. The majority of the cars are actually on their way to the market before their contents are sold. These diversions have become a vital part of the marketing of perishables and, through an elaborate record of train consists, the diversion bureau can determine almost at once the location of any carload of perishables. In 1936, this P. F. E. bureau handled 969,746 diversions.

Each kind of perishables requires somewhat different handling and the following paragraphs give a summary of these operations. The harvesting is taken care of by itinerant workers, and the railway men also move from place to place as the crops ripen, thus giving the benefit of an experienced staff of extra men for each particular movement.

Lettuce

The shipment of lettuce from California began in 1915 when five cars moved from the Imperial Valley. Now there are five major lettuce areas in California and Arizona, producing between 40,000 and 50,000 carloads of this vegetable annually, about half of the production being in the Salinas-Watsonville district in California, the other producing areas in the order of their importance being the Imperial Valley, the Salt River Valley, the Yuma Valley and the Santa Maria-Guadelupe district.

The Salinas-Watsonville district comprises more than 500 square miles of lettuce acreage. Yards at Salinas, Watsonville and Watsonville Junction are the focal points in the operations of the S. P. here. Six switch engines are operated in Salinas yard and 14 at Watsonville Junction, in addition to 4 locomotives handling loads and empties in shuttle service between the two yards. Each year some 60 additional station employees and 170 train, engine and yard men are required in this district during the heavy days of lettuce loading.

The car supply is calculated to avoid extra locomotive miles, and sufficient cars for one day's loading are kept at the packing plant sidings. Emergency supplies of cars are maintained at San Jose and Watsonville Junction yards, but the Roseville yard is the principal source of supply. Each night, enough empties are billed from

this yard to the lettuce-loading districts to take care of the next day's demands, and to replenish the supply at the local yards. This local yard supply protects against delays to trains from Roseville and also supplies cars to the loading stations where the track room is insufficient to hold a day's supply, such stations sometimes receiving three "spots" daily.

Phoenix and Mesa serve as concentration points for the Salt River Valley lettuce territory and on April 3, 1937, 25 packing plants scattered over a 30-mile area loaded 193 cars of lettuce. What this meant at Phoenix with the other traffic handled was that on one day recently 8 freight trains were forwarded west and 10 trains east, with 7 received from each direction. Over 1,000 cars were switched that day by 8 yard engines, including 200 cars of lettuce.

In packing lettuce, a layer of crushed ice is placed between each of four layers of lettuce packed in the crate. After the crates are loaded in cars, the top icing machine blows crushed ice over the tops of all the crates in the car. Such initial icing usually suffices to carry the shipments to destination, although on some cars, the top icing must be replenished, and during warm weather the cars frequently move with one bunker icing of 10,600 lb.

Citrus Fruits

The citrus fruit industry was founded in southern California 60 years ago, and has since spread until there are now over 320,000 acres of citrus groves in southern, central and even northern California, as well as in Arizona. This crop is marketed through 210 packing associations and brings about $100,000,000 in freight revenues annually for 45,000 cars handled. Colton, Cal., is the principal citrus concentration point for the widespread southern California area and trains are made up here by the S. P. for movement east via El Paso.

Citrus fruit must be loaded carefully as the skin bruises easily and decay then sets in. The pickers wear gloves and all fruit is scrubbed with water and soft brushes, dried by blowers, and then passed through revolving brushes to coat the skin with a thin film of wax for protection.

Grapes

The grape industry is also some 60 years old in California, and, during prohibition, a maximum of 680,000 acres of grapes was cultivated. This has now been reduced to about 500,000 acres, but the production of wine and raisin grapes still reaches some two million tons annually.

Shipments jumped from 16,000 cars in 1918 to 73,000 cars in 1927, placing a considerable strain on railway facilities until the necessary adjustments were made. At one time, during the peak grape movement 94 freight and 38 passenger trains were handled through Roseville, Cal., on one day, or a train every 11 min. for the 24 hr. With the current loading of some 30,000 cars annually, these problems have been materially simplified, although it is still necessary to hire about 750 extra men during the grape-shipping season.

The vast volume of other fruits and vegetables, raised over a scattered producing territory, are handled similarly. Perishable handling in the West is an all-year round job, with certain regularly occuring peaks. The operating set-up is so arranged as to take care of such regular and peak movements without difficulty. Also, through years of experience, the operations have become sufficiently flexible so that the emergencies caused by weather or market conditions are taken care of by the railroads in their stride.

New Books...

Proceedings of the American Railway Engineering Association for 1939. 803 pages 6 in. by 9 in. Bound in cloth or half Morocco. Published by the Association, 59 East Van Buren Street, Chicago. Price—cloth $8; half Morocco, $9.

This volume contains the complete record of the activities of the association for the year ending with the annual convention in March, and includes the reports of 27 standing and special committees and the discussions that followed their presentation at the convention. The wide variety of subjects, 127 in number, covered by the reports include practically every phase of railway engineering and maintenance; many problems of operation, especially as operation is affected by facilities; and numerous studies and discussions of the economies of railway location, maintenance and operation. Because of its wide scope this volume is of value equally to maintenance, engineering and operating officers. Substantially all of the reports represent the results of several years of intensive work by the respective committees, and it is this thorough study on the part of the committees that has given the proceedings of this association their high standing in engineering literature.

Space permits only brief mention of a few of the outstanding features. Among these is a report containing an analysis of and method for computing locomotive performance to determine the economic value of various locations and gradients; the effect of waterways on the economies of railway operation; and spirals required for high-speed operation. Another report includes the air conditioning of buildings for the storage and treatment of fruit and produce. Two other reports include a series of studies on track and rail. A fifth report includes economic studies on the value of water treatment; a sixth contains studies on grade-crossing protection; while a seventh contains a series of studies on maintenance of way work equipment. In the field of economics, in addition to those already mentioned, there are reports relating to railway maintenance and operation, and railway labor. Among the valuable features of the proceedings are statistical data for the previous year on rail failures, crosstie renewals and crosstie service records.

Railroads and Rivers, The Story of Inland Transportation, by William H. Clark. 334 pages. 8¾ in. by 5¾ in. Bound in cloth. Published by L. C. Page & Company, Boston, Mass. Price $3.50.

One of the more mature works on transportation written for the general reading public, this book, despite its title, concentrates chiefly on the history and present development of the American railroads. Attractively bound and well-illustrated, it makes not only pleasant reading but, if widely circulated, bids well to do a much-needed job of basic education in the truths of transportation. For in highlighting his narrative with the romantic and appealing elements of the story, Mr. Clark has dared as well to explore beyond the boundaries of usual "popular" work on transportation and discusses such controversial matters as basic highway and water-way costs, the proper source for paying them and the justification of subsidies to air transport. Further, he has the courage to speak his mind, which jibes pretty closely with that of most mature students of transportation.

Perhaps the greatest service the book fills is in "looking at the record" of that neglected, obscure period of our transportation past—the turnpike era. The author does a rather detailed job in describing the building of a network of toll-roads by private companies along the eastern seaboard and immediate interior, together with a valuable map of the situation as of 1812. Well worth reading also is his keen appraisal of the birth of government largess for harbors and rivers improvements, of which, as he writes, "there will never be an end as long as tax money can be appropriated by legislative bodies."

Backed by careful research and a talent for arranging material, he steers a readable and simple course through the complicated boom period of railroading, without sacrificing important material. His brief chapter on regulation is recommended for all secondary school students and adults who need to catch up in their reading, and his terse discussion of present-day railroad competitors should inform without offending all fair-minded men.

NEWS

Strait-Jacket Is Limbered Up

Senate passes revised bill after compromise leads roads to end opposition

The Senate on August 1 passed S. 2903, the revised version of the bill giving the Interstate Commerce Commission regulatory authority over the so-called "outside investments" of railroads, which was worked out by a committee of railroad counsel in conjunction with Telford Taylor, a member of the Wheeler railroad finance investigating committee's legal staff, and Interstate Commerce Commissioner Mahaffie. The compromise bill was reported from the committee on interstate commerce as a substitute for S. 2610, which had become known as the "strait-jacket" bill.

It was after the July 27 hearing on the latter before a sub-committee headed by Senator Truman, Democrat of Missouri, that the revised version came forth. At that hearing Senator Truman announced that because of the changes made in the new bill, S. 2903, the railroads had decided not to oppose the measure in the belief that the administration of the law would not prove too burdensome. Judge R. V. Fletcher, vice president and general counsel for the Association of American Railroads, who had opposed the measure at earlier hearings, explained that he had worked on the measure with Mr. Taylor and Commissioner Mahaffie and that he believed the bill would be workable. He went on to point out that the new measure would give the commission control over the purchase of securities by railroads, but that it would not be given power to control the operation of railroad subsidiaries such as hotels and oil wells. The original measure was sweeping in its application, giving the commission power over all outside railroad activities and investments.

Appearing on behalf of the Union Pacific, which has numerous outside investments, was Henry W. Clark, vice-president and general counsel, who told the subcommittee that his company did not oppose or endorse the measure as drafted, but desired to reserve the right to object at a later date if it saw fit.

E. E. McInnis, general counsel for the Atchison, Topeka & Santa Fe, accepted the measure for his road, pointing out to the subcommittee that the company realized that all regulation was burdensome, but that the bill in this form was the least burdensome. This sentiment was also voiced by H. W. Biklé, general counsel for the Pennsylvania; and C. J. Beakes, general counsel for the New York Central. All of these expressed to the committee their gratitude for being permitted to sit down with Mr. Taylor and Commissioner Mahaffie and work out a revised bill which would not be too burdensome to the industry.

After these statements, Senator Truman closed the hearings and later in the same day Senator Wheeler for himself and Senator Truman, reported to the Senate without amendment the revised measure.

A.A.R. Directors Think Transport Legislation is Well Advanced

Members of the Association of American Railroads board of directors, meeting in Washington, D. C., on July 28, discussed the legislative situation and were reported to have been gratified over the fact that "fairly comprehensive" general transportation legislation had passed both houses of Congress. It was recognized that final action will undoubtedly be delayed until next session, but such recognition was accompanied by an expectation that a conference report on the Senate and House versions of S. 2009 would be worked out for adoption early in the next session.

Philadelphia Commercial Zone

The Interstate Commerce Commission, Division 5, has made public a decision in Ex Parte No. MC-6, defining the commercial zone of Philadelphia, Pa., wherein transportation by motor vehicle in interstate commerce, not under a common control or arrangement for a continuous carriage or shipment to or from a point beyond the zone, is partially exempt from regulation under the Motor Carrier Act.

Sunday Trucks Prohibited in Texas

The operation of commercial trucks upon the trunk highways of Texas on Sundays and holidays is now prohibited by an order issued by the Railroad Commission of Texas. The order, which has for its purpose the protection of human lives, does not apply to farmers and other private operators who own their trucks. Exceptions also are made for trucks transporting fresh meats, fish, poultry, poultry products, milk and dairy products, fresh fruits and vegetables and any commodity requiring refrigeration in transit.

Stock Kayoed in Rio Grande Plan

R. F. C. called on to ante 17 million for revamp; to be road's biggest bondholder

Denver & Rio Grande Western common and preferred stock would be wiped out and its annual fixed charges reduced from approximately $6,000,000 to about $1,350,000 under a plan of reorganization approved by the Interstate Commerce Commission in a report made public on July 29. The D. & R. G. W. common is all owned jointly by the Missouri Pacific and the Western Pacific.

Consummation of the commission-approved plan, which differs from that recommended by Examiner M. S. Jameson (see *Railway Age* of August 13, 1938, page 260), would be contingent upon a "definite commitment" by the Reconstruction Finance Corporation to furnish the $17,443,675 in cash necessary to carry it out. Such commitment, the commission says, would have to be made prior to the referendum on the plan and perhaps six months to a year before R. F. C. would be called upon to supply the funds. Also, the plan contemplates the consolidation into the reorganized D. & R. G. W. of the Denver & Salt Lake Western, secondary debtor, the Denver & Salt Lake, the Rio Grande Junction and the Goshen Valley, all D. & R. G. W. affiliates and parts of its system.

Because of R. F. C.'s strategic position as holder of key collateral and potential supplier of the new money, the commission would give the lending agency all of the reorganized company's $29,403,144 initial issue of new first mortgage four per cent bonds; this to refinance outstanding R. F. C. loans in the amount of $11,959,469 and to evidence the debt for the $17,443,675 for the new money supplied. The latter would be applied to the redemption of Denver & Salt Lake first mortgage and income bonds ($11,443,675); to the payment of $5,000,000 of D. & R. G. W. trustees certificates; and to the provision of $1,000,000 for reorganization expenses. If R. F. C. fails to make the necessary commitment in this connection the commission says that the plan "should be considered to be impracticable and should be returned to us for further consideration."

Total capitalization of the reorganized company would be $147,433,354, consisting, in addition to the $29,403,144 of first mortgage bonds, of: Equipment obligations to

(*Continued on page 230*)

6 Months N. O. I. Was $165,262,517

1.57 per cent return compares with 0.67 per cent for first half of 1938

Class I railroads of the United States in the first six months of 1939 had a net railway operating income of $165,262,517 which was at the annual rate of return of 1.57 per cent on their property investment, according to the Bureau of Railway Economics of the Association of American Railroads. In the first six months of 1938 the net railway operating income was $71,185,513 or 0.67 per cent, and in the first six months of 1930, it was $369,416,251 or 3.46 per cent.

Class I roads in June, had a net of $39,095,476 or 1.83 per cent compared with $25,159,522 or 1.18 per cent in June, 1938, and $67,683,471 or 3.27 per cent in June, 1930.

Gross operating revenues for the first six months of this year totaled $1,804,126,557 compared with $1,636,067,040 for the same period in 1938, and $2,658,254,307 for the same period in 1930, an increase of 10.3 per cent in 1939 above 1938, but 32.1 per cent below 1930. Operating expenses for the six months amounted to $1,400,744,164 compared with $1,331,594,098 for the same period in 1938, and $2,048,678,522 for the same period in 1930—5.2 per cent above the former, but 31.6 per cent below 1930.

Class I roads in the first six months of 1939 paid $172,469,982 in taxes compared with $168,869,283 in the same period in 1938, and $177,366,289 in the same period in 1930. For June alone, the tax bill amounted to $29,569,457, an increase of $1,355,321 or 4.8 per cent above June, 1938. Thirty Class I roads failed to earn expenses and taxes in the first six months, of which 10 were in the Eastern district, five in the Southern district, and 15 in the Western district.

Gross for June amounted to $321,616,735 compared with $282,080,672 in June, 1938, and $439,377,179 in June, 1930. Operating expenses in June totaled $241,785,659 compared with $218,132,406 in the same month in 1938, and $330,732,585 in June, 1930.

Class I roads in the Eastern district for the first six months had a net railway operating income of $102,571,021 or 1.83 per cent; for the same period in 1938, their net was $49,244,034 or 0.87 per cent, while in 1930 it was $215,790,724 or 4.06 per cent. Gross in the Eastern district for the six months totaled $880,553,087 an increase of 13 per cent compared with 1938, but a decrease of 34.5 per cent compared with 1930; operating expenses totaled $661,950,694, an increase of 7.1 per cent above the same period in 1938, but a decrease of 34.8 per cent under the first six months of 1930.

The June net in the Eastern district was $22,653,705 compared with $14,124,179 in June, 1938, and $38,056,351 in June, 1930.

Net in the Southern district for the six months was $31,688,070 or 2.05 per cent; for the same period in 1938, it amounted to $20,911,130 or 1.36 per cent, and for the same period in 1930 it was $42,941,024 or 2.64 per cent. Gross in the Southern district for the six months amounted to $247,737,249, an increase of 7.8 per cent compared with the same period in 1938, but a decrease of 27.6 per cent under the same period in 1930; operating expenses totaled $186,607,866, an increase of 3.8 per cent above the same period in 1938, but a decrease of 31.1 per cent under 1930. The Southern district net for June was $4,353,245 compared with $2,337,745 in June, 1938, and $4,045,590 in June, 1930.

Class I roads in the Western district for the six months had a net railway operating income of $31,003,426 or 0.91 per cent. For the same period in 1938 those same roads had a net of $1,030,349 or 0.03 per cent, and for the same period in 1930 they had a net of $110,684,503 or 2.97 per cent. Gross in the Western district for the six months amounted to $675,836,221, an increase of 7.7 per cent above the same period in 1938 but a decrease of 30.4 per cent below the same period in 1930; operating expenses totaled $552,185,604, an increase of 3.5 per cent compared with the same period in 1938 but a decrease of 27.6 per cent under the same period in 1930.

For June alone the Class I roads in the Western district had a net of $12,088,526 compared with $8,697,598 in June, 1938, and $25,581,530 in June, 1930.

CLASS I RAILROADS—UNITED STATES

	1939	1938	1930
Month of June			
Total operating revenues	$321,616,735	$282,080,672	$439,377,179
Total operating expenses	241,785,659	218,132,406	330,732,585
Taxes	29,569,457	28,214,136	30,580,933
Net railway operating income	39,095,476	25,159,522	67,683,471
Operating ratio—per cent	75.18	77.33	75.27
Rate of return on property investment	1.83	1.18	3.27
Six Months Ended June 30			
Total operating revenues	$1,804,126,557	$1,636,067,040	$2,658,254,307
Total operating expenses	1,400,744,164	1,331,594,098	2,048,678,522
Taxes	172,469,982	168,869,283	177,366,289
Net railway operating income	165,262,517	71,185,513	369,416,251
Operating ratio—per cent	77.64	81.39	77.07
Rate of return on property investment	1.57	0.67	3.46

All-Freight Rates Case Reopened

The Interstate Commerce Commission has reopened for further hearing the case involving suspended schedules proposing "all-freight" rates from Chicago and St. Louis, Mo., to Birmingham, Ala. The reopening order in the proceeding (I. & S. Docket No. 4315) was dated July 31, and it rescinded an order of July 24 which had denied petitions for a rehearing.

I. C. C. Safety Code For All Trucks?

Examiner discloses that private driver asleep at wheel may also have a mishap

Interstate Commerce Commission regulations governing maximum hours of service of drivers and safety of operation and standards of equipment of common and contract motor carriers would, with relatively minor exceptions, be made applicable also to private trucks operating in interstate commerce if the commission adopts the recommendations of Examiner R. W. Snow's proposed report in Ex Parte No. MC-3. That proceeding, in which the proposed report was made public on July 31, is the investigation instituted July 30, 1936, on the commission's own motion for the purpose of establishing for private carriers of property by motor vehicle, "if need therefor be found," reasonable requirements to promote safety of operation.

The examiner reached his conclusion that there is a need for federal regulation from the standpoint of safety after finding, among other things, that "long hours of driving which are dangerous per se are prevalent in the private carrier industry;" and that many other "clearly unsafe" practices are permitted by the laws of the several states.

"The evidence submitted in this case," he said, "clearly demonstrates that from the standpoint of safety, it makes no difference whether a truck is owned and operated by a for-hire carrier or by a private carrier. At any given time under the same circumstances a truck operated by a private carrier is as likely to be involved in an accident as a truck operated by a for-hire carrier. No good reason was suggested and none can be perceived why the same regulations governing maximum hours of service of drivers and safety of operation and standards of equipment of motor vehicles should not be made applicable to all types of carriers.

"As has been pointed out, this is not the situation under the laws and regulations of the several states, and this is primarily due to the fact that the state laws do not authorize the regulatory commissions and officers to impose as strict regulations on private carriers as on for-hire carriers. In many instances the utility commissions have no jurisdiction whatever over private carriers. The necessity for applying the same type of regulations as are applied to carriers for hire, and the failure of the states to do so is a strong if not conclusive factor leading to the conclusion that there is need for federal regulation of private carriers of property to promote safety of operation."

The exemptions, as will be seen from the recommended findings set forth below, apply to farm trucks, although drivers of work trucks would be exempt from the rule requiring the keeping of a driver's log. Meanwhile the examiner rejected contentions that driver-salesmen should be exempt from the so-called 10-minute rule

(*Continued on page 230*)

New York-Chicago Coach Trains Start

Pacemaker and Trail Blazer make runs amidst pomp and circumstance

In a welter of good luck toasts, radio broadcasts, arrival and departure speeches and whistle fanfares of neighboring locomotives the New York Central's "Pacemaker" and the Pennsylvania's "Trail Blazer," luxurious all-coach trains between New York and Chicago, left their initial termini for their first runs on July 28. Well-filled with interested customers, many of whom had never spent a night on the rails or watched passing scenery from a dining car window, the trains made their trips across a third of the continent without an operating hitch, except at one point when a novitiate passenger, unused to "so many gadgets," pulled the conductor's brake valve by mistake.

The Central's westbound Pacemaker, loaded to capacity with 385 passengers, pulled out of Grand Central Terminal, New York, at 6:01 p. m. (e. d. s. t.) right on the tail of the Twentieth Century and arrived at La Salle Street, Chicago, at 9:45 a. m. (c. d. s. t.), 15 minutes ahead of time and just 45 min. behind the extra-fare Century. Fifteen minutes before departure, a crowd of 400, in addition to the passengers, watched Charles Poletti, lieutenant-governor of New York, crack a bottle of champagne over the rear buffer of the gray-and-silver observation-lounge car. The brief ceremony, with Vice-President R. E. Dougherty as toastmaster, was broadcast by the Columbia Broadcasting Company. The eastbound Pacemaker left Chicago at 3 p. m. (c. d. s. t.) with 285 passengers aboard and arrived in New York 17 hours later.

A 15-piece band and the P. R. R. employees' quartet serenaded the westbound Trail Blazer just before its departure from Pennsylvania station, New York, "sold out" with 350 passengers aboard at 6:25 p. m. (e. d. s. t.). Vice-president George Le Boutillier acted as master of ceremonies and Miss Julia Gross, of New York, first passenger to make a seat reservation, christened the new pride of the coach passengers. All along its 17-hr. run to Chicago, the Trail Blazer was saluted in turn by the horns and whistles of passing locomotives and at Altoona, the "railroad city," a large delegation waited until after midnight to do honor.

The eastbound Trail Blazer left Chicago at 1:30 p. m. (c. d. s. t.) bearing 240 passengers. Enroute a short broadcast pick-up was made aboard the train as part of a nation-wide program reported elsewhere in these columns. Running through to the New York World's Fair over the Long Island, the train carried a message from Rufus Dawes, president of Chicago's "Century of Progress" exposition, to Grover Whalen of the present World's Fair.

Transport Bill Conferees Named

Waterway bloc head tries to instruct House contingent but effort fails

Five members of the Senate committee on interstate commerce and seven members of the House committee on interstate and foreign commerce have been named by their respective branches of Congress to comprise the conference committee which will endeavor to evolve a compromise measure from the Senate and House versions of S. 2009, the general transportation bill carrying amendments to the Interstate Commerce Act and provisions for the regulation of water carriers by the Interstate Commerce Commission.

The Senate conferees are: Chairman Wheeler, Senators Truman of Missouri and Donahey of Connecticut (Democrats) and White of Maine and Reed of Kansas (Republicans). House conferees are: Chairman Lea, Representatives Crosser of Ohio, Bulwinkle of North Carolina and Cole of Maryland (Democrats) and Wolverton of New Jersey, Holmes of Massachusetts and Halleck of Indiana (Republicans).

As pointed out in recent issues of *Railway Age* there is little hope for final action on the bill at the present session of

New All-Coach Through Trains Between New York and Chicago. At Top is the Pennsylvania's "Trail Blazer" at the New York World's Fair and at Bottom The New York Central's "Pacemaker" Enroute

Congress which was moving toward adjournment by the end of this week. Chairman Wheeler was quoted as having called the bill "dead for this session." Meanwhile it was thought that the conferees might get together for a preliminary meeting before adjournment, preparatory to holding a series of meetings later in the year when a conference report will be prepared for presentation early in the next session.

There was no discussion in the Senate when the conferees were appointed on July 27 as a result of Chairman Wheeler's motion. When the matter came up in the House on July 29, Representative Warren, Democrat of North Carolina, leader of the waterway "bloc," endeavored to commit Chairman Lea to a plan of insisting on certain amendments made by the House. Among the amendments mentioned by Mr. Warren in that connection was that which stipulates that the I. C. C. must not approve any consolidation which would result in the displacement of employees; also, the so-called Wadsworth amendment which would direct the I. C. C. to permit any carrier to reduce its rates if the resultant charge would be compensatory after taking into consideration all elements of cost including overhead. When the same amendment was put into the Senate bill by Senator Miller, Democrat of Arkansas, it was interpreted as one which might preclude the making of competitive rates on an out-of-pocket basis; it has also been interpreted as one which would prevent the I. C. C. from ordering an increase in water rates if the carriers involved could show that they were making money with the existing rates.

Representative May, Democrat of Kentucky, argued against any attempt to ask Chairman Lea to commit himself, suggesting that "it is embarrassing to a chairman to be told what he must do in advance." Meanwhile Chairman Lea said nothing and Mr. Warren made no formal objection to the pending request for the appointment of the conferees, who remain uninstructed.

The bill was passed by the Senate on May 25 by a roll-call vote of 70 to 6, as noted in the *Railway Age* of June 3, page 948. The House's uncodified and much-amended version went through the lower branch without a record vote on July 26, after the defeat by a roll call vote of the motion to recommit offered by Representative Wadsworth, Republican of New York. As finally corrected and published in the Congressional Record the vote on this Wadsworth motion (the only record vote on the bill in the House) was 99 to 273, one less favorable vote than the 100 reported in last week's issue where the House's action was covered.

Dispute Dating Back to 1864 Settled

A dispute which dates back to a lease made in 1864 was settled by the Illinois Commerce Commission at Springfield, Ill., on July 8. A lease in perpetuity between the Chicago & Joliet and the Chicago & Alton, predecessor of the Alton, in 1864 gave the Chicago and Alton the right to use the 37-mile line from Joliet to Chicago. Numerous curves raised the cost of train operation, so much that the Alton later reduced many of the curves at its own expense and acquired title to the new changes in right-of-way. This procedure left gaps in the railroad's line and the Chicago & Joliet therefore sought to cancel its lease to the Alton, alleging the Alton's action constituted a sufficient breach of lease to warrant suit. Recently the two railroads entered into an agreement whereby the Alton conveyed its new right-of-way to the Chicago & Joliet in exchange for an amendment to its 1864 lease in perpetuity. Approval of this action by the Illinois Commerce Commission now ends the litigation.

Golf Outing of Anthracite Roads

The so-called anthracite railroads are sponsoring a golf outing for railroad and supply men at the Fox Hill Country Club, Pittston, Pa., on Thursday, August 10. Special service to and from Pittston is being operated by the Lehigh Valley. Reservations should be made with F. S. Metzger, passenger agent of the road.

Eddy Reappointed to Railroad Retirement Board

The Senate on August 1 confirmed President Roosevelt's reappointment of Lee M. Eddy for a Railroad Retirement Board term of five years from August 29. Mr. Eddy, whose nomination went to the Senate on July 28, is railroad labor's representative on the Board.

A. S. C. E. Makes J. M. R. Fairbairn Honorary Member

At a meeting of the Board of Directors of the American Society of Civil Engineers in San Francisco on July 24, J. M. R. Fairbairn, who retired as chief engineer of the Canadian Pacific System on January 1, was elected an honorary member of the society. Mr. Fairbairn is also a past president of the Engineering Institute of Canada.

Erie Runs Saturday Afternoon Fan Trip

The Erie is operating a short afternoon trip for railroad enthusiasts today over its New Jersey lines out of New York. Leaving Jersey City, N. J., the train will proceed via the Newark branch and the main line to Suffern, N. Y.; thence proceed over the Piermont branch to Sparkill and return to Jersey City via the Northern of New Jersey.

Equipment Depreciation Rates

Equipment depreciation rates for nine railroads, including the Minneapolis & St. Louis and the Detroit & Toledo Shore Line, have been prescribed by the Interstate Commerce Commission, in a new series of modifications of previous suborders in No. 15,100, Depreciation Charges of Steam Railroad Companies. The composite percentages for all equipment, which are not prescribed rates, range from 2.55 per cent for the Staten Island Rapid Transit to 10.8 per cent for the Augusta Northern.

The M. & St. L.'s composite percentage of 3.43 is derived from prescribed rates as follows: Steam locomotives, 3.02 per cent; other locomotives, 3.26 per cent; freight-train cars, 3.46 per cent; passenger-train cars, 4.26 per cent; work equipment, 4.79 per cent; miscellaneous equipment, 14.82 per cent. The Detroit & Toledo Shore Line, with a composite percentage of 3.89, gets prescribed rates as follows: Steam locomotives, 3.93 per cent; freight-train cars, 3.74 per cent; work equipment, 4.46 per cent.

Correction

The New York Central had total operating revenues (including Miscellaneous) of $129,274,228 for the five months period ended May, 1939. This figure was incorrectly given as $12,274,228 in the table of Revenues and Expenses of Railways which appeared on page 97 of the July 8 *Railway Age*.

Denver Produce Terminal Opens

Denver's new million dollar market and produce terminal, a co-operative project of the Atchison, Topeka & Santa Fe, the Denver & Rio Grande Western, the Chicago, Burlington & Quincy, the Chicago Rock Island & Pacific and the Colorado & Southern was opened on August 1. The Wazee Street market and terminal is served by 21 fast green-fruit trains daily as well as by local trains and trucks.

Train Robbery Foiled

An attempt by two armed bandits to steal a $75,000 army payroll from an Illinois Central train between Onarga, Ill. and Del Rey, about 80 miles south of Chicago, on July 31, was defeated by two mail clerks who battled the robbers and captured one. The robbers boarded the train at Onarga and immediately entered the mail car, where they were resisted by the armed clerks. Upon failure to subdue the clerks, the bandits jumped from the moving car and one, who was injured, was captured.

Bridge Bill May Pass

The House of Representative committee on interstate and foreign commerce on August 2 ordered a favorable report on the Senate-approved bill (S. 1989) to relieve railroads of some of the costs of reconstructing bridges required to be altered in connection with waterway improvement projects. Similar provisions are included in the House version of S. 2009, but this omnibus transportation bill will be stalled at the conference stage until the next session; thus the move to complete Congressional action on the separate bridge bill.

Patterson Takes Oath as Member of I. C. C.

William J. Patterson, former director of the Interstate Commerce Commission's Bureau of Safety, took his oath of office as a member of the commission and assumed his duties in that connection on July 31. The appointment of Mr. Patterson, whom President Roosevelt named to succeed B. H. Meyer, was confirmed by the Senate on July 27. Events leading up to the appointment of Mr. Patterson

were reviewed in the *Railway Age* of July 29, page 194, where a sketch of the new commissioner's career was also published.

President Signs Chandler Bill

President Roosevelt on July 28 signed the so-called Chandler voluntary railroad reorganization act, which gives legal sanction to such plans for readjustments of capital structures as have been worked out by the Baltimore & Ohio and Lehigh Valley. Congressional action on the measure was completed the previous day when the House of Representatives adopted the conference report which had been approved by the Senate on July 25.

As finally enacted the benefits of the measure, details of which were given in the *Railway Age* of July 29, page 193, are limited to a period of one year from July 31.

Congress Enacts Rivers and Harbors Surveys Bill

Both the Senate and the House of Representative this week passed H. R. 7411, thus completing Congressional action on this measure introduced by Chairman Mansfield of the House committee on rivers and harbors to authorize preliminary examinations and surveys of some 108 rivers and harbors projects for navigation purposes. Passage of this survey bill came as the aftermath of the Senate commerce committee's decision to postpone until next session consideration of H. R. 6264, the rivers and harbors bill which passed the House carrying authorizations totaling $83,000,000, but which Senate committee reported as a record-breaking $407,855,600 measure.

Senate Passes Postalization-Study Resolution

The Senate on August 1 passed Senate Joint Resolution 58 which would authorize (but not direct) the Interstate Commerce Commission to make a preliminary investigation of the postalized-fare plan being promoted by John A. Hastings, former New York State senator. Since a joint resolution requires action by both houses of Congress the measure's chances for final passage before adjournment of the session were regarded as slim.

Senator Miller, Democrat of Arkansas, asked about the committee on interstate commerce's amendment which had the effect of excluding freight rate and limiting the proposed commission investigation to passenger fares; the Arkansan did not want the commission "to get the idea that the Congress would be content with letting them equalize passenger fares and pass over the question of freight rates." Senator Wheeler said he agreed, but he thought the passenger-fare phase was all that could be dealt with at this time; he intends in the next session of Congress to take up the freight rate question and to "endeavor to have something done about it."

The Canadian Roads in June

The Canadian Pacific in June had net operating revenues totaling $1,063,318 (last year the total was $511,408). Gross for the month was $10,354,157 (last year $10,144,944) and operating expenses were $9,290,839 (last year $9,633,535). For the six months, net has totaled $5,351,343 (last year $2,681,028), gross $61,807,844 (last year $61,287,528) and expenses $56,456,500 (last year $58,606,499).

The Canadian National in June had an operating deficit of $12,095 (compared with $770,582 in June last year). Operating revenues were $15,189,521 (up $1,487,277) and operating expenses $15,201,616 (up $728,790). For the six months, the C. N. R.'s operating deficit has totaled $505,417 (it was $5,679,982 a year ago). Operating revenues have totaled $87,681,530, (up $4,921,971) and operating expenses $88,186,947 (down $252,594).

Lake Coal Demurrage

Revisions of lake cargo coal rules and transfer charges effective November 20 have been ordered by the Interstate Commerce Commission in a report by Commissioner Porter in No. 27,266, Lake Coal Demurrage.

The headnotes on the decision summarize the findings as follows:

1. Lake coal demurrage rules and transfer charges at lower lake ports not found unlawful, except as noted below.
2. Certain practices of respondents under their pre-season rules in effect prior to April 15, 1936, particularly with respect to substitution of vessels designated to receive lake coal, found to have been in violation of section 6 (7) of the act.
3. Proposed amendment to sequence release rule, applying to cars released prior to sending of arrival notices or which arrive after vessel taking contents of such cars is available for loading, approved.
4. Rule 5 (b), allowing 10 days' free time for reconsignment of specific consignments closed out during the season, found unreasonable to the extent such allowance exceeds 8 days. Unreasonableness required to be removed.
5. Rule 3 (e), paragraph 2, found unreasonable in failing to provide that the 5 days' credit on each car therein allowed will not apply on consignments closed out and reconsigned during or at the end of the season. Unreasonableness required to be removed.
6. Respondents serving Lake Erie and Lake Ontario ports not now doing so, required to publish separately in their tariffs the line-haul rates to, and the transfer charges at, the ports on bituminous and anthracite lake coal.
7. Leasing of transfer facilities at certain of the ports found to be under provisions which are noncompensatory to respondents and unduly favorable to the lessees, in contravention of section 15a (2); and in two instances in violation of sections 3 (1) and 6 (7) of the act. The latter violations required to be removed.

The foregoing are much less drastic than the 18 recommended findings of Examiner E. A. Burslem's proposed report which was reviewed in the *Railway Age* of November 6, 1937, page 657. Commissioner Alldredge dissented in part and was authorized to say that Chairman Eastman agreed with certain of his conclusions. Commissioner Caskie did not participate in the disposition of the proceeding.

Pacific Railway Club Expands Activities

At a meeting called especially to consider the matter, the board of governors of the Pacific Railway Club recently decided to increase the club's activities by conducting monthly meetings alternately in northern and southern California, and by amending the club's constitution so that commencing with the next fiscal year there will be an increase in the number of vice-presidents from two to four, two of whom will be from each portion of the state. With about 40 members in southern California the club has been holding one meeting each year in Los Angeles, usually in September. More meetings have not been held there because the larger part of the membership is in the San Francisco Bay area and the expense of holding meetings so far from headquarters has been too great.

It is now proposed to engage in a campaign to bring the southern California membership to a total of at least 150, and with the additional revenue thus obtained to hold at least four, and possibly six, meetings there. While the holding of these meetings in Los Angeles will necessarily mean fewer meetings in San Francisco, all members will receive the transcripts of all meetings in the club's monthly publication, and it is believed that many of the club members will attend meetings in both parts of the state. Incidentally, the Pacific Railway Club is one of the few organizations of its kind to hold 12 meetings a year and it is believed that alternating them between the two cities will improve the attendance. This is important since the club has for the past several years drawn on the eastern states for its principal speakers and it is felt that, in view of the distance they travel to address it, they are entitled to have the largest possible group to hear them.

The first meeting in Los Angeles will be Friday evening, September 15, at the Hotel Hayward.

H. D. Pollard Discusses an Employee and His Job

Ways in which railroad employees might seek to insure their continued employment in the industry are outlined in the latest issue of "Talking Points" issued by H. D. Pollard, receiver, Central of Georgia. As a point of departure the writer uses a document filed by a labor attorney with the Interstate Commerce Commission recently in hearings on reorganization of the Minneapolis & St. Louis on behalf of shopmen who fear loss of their jobs, in which the inability of the men to obtain other employment or to sustain themselves in unemployment is brought out.

Mr. Pollard agrees that the plight of such employees in unemployment, considering their high average age, number of dependents and obligations generally, is fairly typical of the railway industry and expresses his sympathy with their fear. It is his belief, however, that there are a great many things that railroad employees can do to protect their jobs or even increase employment. Among these he lists co-operation in securing equality of competitive opportunity by pressing for a public policy of comparable regulation, supervision and taxation for all forms of transportation. In addition to such political activity he declares that employees can shape the policies of their labor organizations so that they will not "kill employment;" that they can seek an end to exactions of back pay on interpretations of rules through the referee system of the National Adjustment Boards.

Herein he points out that such wages usually go to the higher-paid men in train service. Since few roads pay dividends and many pay no bond interest, he claims, the money for such back pay comes not from investors "but out of the hide of clerks, shopmen and section-hands not engaged in

train operation and who are laid-off to permit the payments to the train service men." He concludes with "Unless and until rail employees understand and act upon these facts, rail employment will continue under the threat of further decreases, and the plight of the 284 shopmen in the Cedar Lake shop of the Minneapolis & St. Louis will be faced by thousands of others."

N. B. C. Broadcast Ties Rail History With "Trail Blazer" and Fairs

Dramatic incidents in the history of railroading together with a broadcast from the Pennsylvania's new "Trail Blazer" and from the fairs at New York and San Francisco featured an hour-long radio program sent out by the National Broadcasting Company over its blue network on July 28, from 8 to 9 p. m. (e. d. s. t.). A cast of nearly 40 actors and a large concert orchestra presented a series of short dramatizations of such notable events in railroading as the birth of the Baltimore & Ohio, the race between the Tom Thumb and a stagecoach, the building of the transcontinentals, and the application of Westinghouse's air brake. In each, the special technique effected by radio to give atmosphere to unseen drama utilizes the familiar noises of railroad operation. "Memory" and "Father Time" sustained the story between "scenes" while music "bridged" transitions.

The program then switched to the eastbound "Trail Blazer," the P. R. R.'s new all-coach train, on its maiden run to New York, where the sounds of the train and the voices of its passengers were picked up. The program then shifted in turn to Chicago, San Francisco, and New York to send out the voices of Rufus Dawes of the "Century of Progress," L. W. Cutler of the Golden Gate Exposition and Grover Whalen of the New York World's Fair, each of whom greeted the other and paid tribute to the achievements of American railroading.

"Story of the Railroads" was written by Tom Langan of the N. B. C. script division from material furnished by the A. A. R. and directed by A. N. Williams. The singing of "Casey Jones" and "I've Been Working on the Railroad" was performed by the Pennsylvania's Keystone Quartet.

Freight Car Loading

Loading of revenue freight for the week ended July 29 totaled 659,764 cars, the Association of American Railroads announced on August 3. This was an increase of 3,423 cars, or five-tenths of one per cent, above the preceding week, an increase of 71,067 cars, or 12.1 per cent, above the corresponding week last year but a decrease of 119,327 cars, or 15.3 per cent, below the comparable 1937 week.

As reported in last week's issue, the loadings for the previous week ended July 22 totaled 656,341 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loadings

For Week Ended Saturday, July 22			
Districts	1939	1938	1937
Eastern	134,167	119,228	155,613
Allegheny	127,413	105,184	157,929
Pocahontas	50,926	41,096	48,463
Southern	91,604	84,156	98,931
Northwestern	102,342	82,285	134,764
Central Western	103,977	103,003	119,053
Southwestern	45,912	45,866	52,717
Total Western Districts	252,231	231,154	306,534
Total All Roads	656,341	580,818	767,470
Commodities			
Grain and Grain Products	46,632	53,341	51,239
Live Stock	11,524	11,201	9,382
Coal	111,437	93,136	108,803
Coke	6,098	4,326	10,425
Forest Products	32,521	26,764	41,744
Ore	42,617	22,105	77,487
Merchandise l.c.l.	152,109	146,219	165,811
Miscellaneous	253,403	223,726	302,579
July 22	656,341	580,818	767,470
July 15	673,812	602,445	766,384
July 8	559,109	500,981	678,958
July 1	665,528	588,880	802,346
June 24	642,987	558,788	769,945
Cumulative Total, 29 Weeks	17,232,384	15,914,876	21,252,987

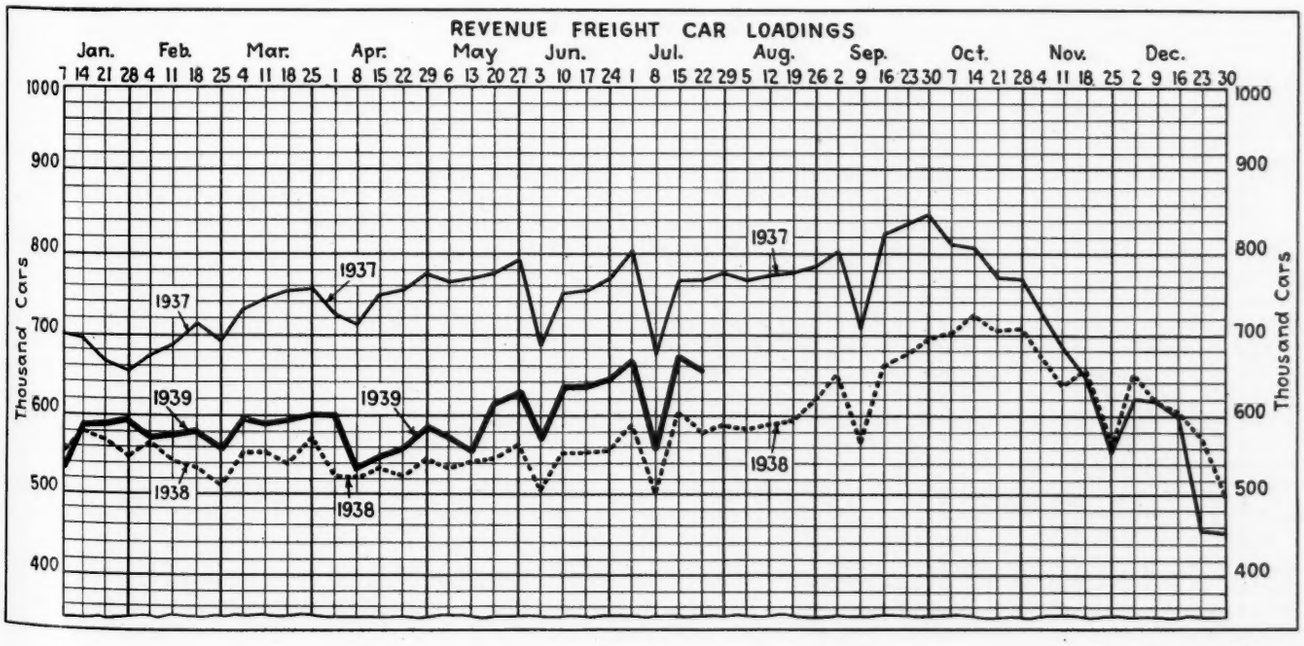
In Canada.—Carloadings for the week ended July 22 totaled 47,657, as compared with 48,448 in the previous week and 43,835 last year, according to the weekly statement issued by the Dominion Bureau of Statistics.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
July 22, 1939	47,657	19,608
July 15, 1939	48,448	19,531
July 8, 1939	47,146	17,938
July 23, 1938	43,835	17,846
Cumulative Totals for Canada:		
July 22, 1939	1,253,698	634,648
July 23, 1938	1,270,877	594,240
July 24, 1937	1,385,936	797,707

House Kills President Roosevelt's Lending-Spending Program

President Roosevelt's lending-spending program went down to defeat on August 1 when the House of Representatives refused even to consider the $1,850,000,000 measure reported favorably by its committee on banking and currency with the President's recommended $500,000,000 for railway equipment cut to $250,000,000. On the previous day the Senate passed the companion bill but only after the provisions for the financing of railway equipment had been stricken out upon motion of Senator Wheeler, Democrat of Montana.

The defeat in the lower branch came with the 193-to-166 adverse vote on the resolution which would have granted a rule for consideration of the bill. In addition to eliminating the railroad-equipment section, the Senate which passed a $1,615,000,000 measure, struck out provisions for financing highway projects to which President Roosevelt had allocated $750,000,000. As reported by the Senate committee on banking and currency, the bill had cut this amount to $500,000,000 and the proposed railway equipment fund from $500,000,000 to $350,000,000. The House bill as reported had also cut the proposed fund for highway projects from $750,000,000 to $500,000,000, and Representative Cartwright, Democrat of Oklahoma, endeavored to make sure of the latter amount by intro-



ducing a separate bill (H.R. 7414) designed to effect the same result as would have been accomplished by the lending-spending bill's highway provisions.

The railroad equipment section was stricken from the Senate bill on July 28 when Senator Wheeler's motion in that connection was carried by a roll call vote of 45 to 32. This vote was preceded by considerable debate in which Senator Wheeler contended that the Reconstruction Finance Corporation already has ample power to finance equipment purchases unless it wants to take in old equipment in exchange; and he is opposed to that proposal which might give farmers the idea of coming in for a loan to buy a pair of mules and offer "old broken-down mules" as security. Also, in the course of the debate, Senator Tobey, Republican of New Hampshire, suggested that "any railroad in this country can borrow all the money it wants to on equipment, and these equipment bonds go like hot cakes without the government acting in the capacity of a wet nurse in the matter."

Mr. Wheeler has no objection "if the government wants to loan money to the railroads on a proper basis;" but he said at another point that in his judgment railroad loans have been made which should not have been made, and "on which the government has taken terrific losses." Also, he challenged "anybody to stand on the floor of the Senate and say that the railroads of the country cannot get money for equipment trusts from any reliable banking firm in the United States today." The provision that the sponsors of the legislation "really wanted," the Montanan went on, "was a provision for the government to buy equipment." And if such a program were launched he predicted it would bring demands for similar government purchase and lease of equipment to manufacturers and farmers. He recalled how he had said when the matter first came up during the Hoover Administration that the R. F. C. legislation was "bad legislation." And he now says "to those who criticize this Administration because of the fact that they have made loans to farmers, and those who criticize this Administration because they have done a lot of other things, that the first wrong thing was done when we started to make loans through the R. F. C. to the banks, and the insurance companies, and the railroads, and when we bailed out some of the big private banking institutions of the country."

Among the speakers in opposition to the Wheeler motion were Majority Leader Barkley and Senator Minton of Indiana, Democratic whip. The former thought that the Wheeler objections to the railroad equipment section could be met by amendments; but the Montanan did not think so—he thought a lending provision to which he would have no objection was unnecessary, and he was objecting "to the fact that there is an attempt to give the Corporation authority to lease to the railroads, and to take the old equipment in the deals."

Before the bill passed the Senate on July 31, Majority Leader Barkley did obtain approval of a provision which would have amended the R. F. C. act so as to authorize the lending agency to use an additional $150,000,000 for railroad loans. Mr. Barkley explained that the amendment had no relation to the pending bill—it merely increased from $350,000,000 to $500,000,000 the upper limit of aggregate R. F. C. loans to the railroads for all purposes. He further pointed out that the more than $350,000,000 outstanding in railroad loans at present is explained by the fact that many loans were made before the $350,000,000 limitation was inserted in the law to apply to transactions after its adoption. The amendment, he went on, was offered after conferring with Federal Loan Administrator Jesse H. Jones, who had advised that the R. F. C. has only $80,000,000 left of the $350,000,000 eligible for rail loans. The amendment would not have increased the borrowing power of R. F. C.

I. C. C. Compilation of Income and Balance Sheet Items for May

The Interstate Commerce Commission on August 2 made public its latest monthly compilation of selected income and balance sheet items, showing May's net deficit of the Class I roads as $18,593,513, and that for this year's first five months as $90,080,460, as reported previously by the Association of American Railroads and noted in the *Railway Age* of July 22. The foregoing compare with a May, 1938, red figure of $25,277,485, and one of $164,281,672 for last year's first five months.

Eighty-six roads reported net deficits for May while 46 reported net incomes; in May, 1938, there were 94 net deficits and 38 net incomes. The consolidated state-

SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 135 Reports (Form IBS) Representing 140 Steam Railways

(Switching and Terminal Companies Not Included)

TOTALS FOR THE UNITED STATES (ALL REGIONS)

For the month of May 1939	For the month of May 1938	*Income Items*	For the five months of 1939	For the five months of 1938
$25,100,766	$16,665,678	1. Net railway operating income	$126,167,040	$46,025,988
10,640,097	11,618,229	2. Other income	52,849,297	55,820,527
35,740,863	28,283,907	3. Total income	179,016,337	101,846,515
1,712,206	1,807,062	4. Miscellaneous deductions from income	9,784,681	10,261,824
34,028,657	26,476,845	5. Income available for fixed charges	169,231,656	91,584,691
		6. Fixed charges:		
11,989,738	10,755,326	6-01. Rent for leased roads and equipment	55,793,745	52,009,000
39,486,678	39,773,370	6-02. Interest deductions	ø197,783,851	ø197,720,128
132,624	213,061	6-03. Other deductions	666,165	1,071,668
51,609,040	50,741,757	6-04. Total fixed charges	254,243,761	250,800,796
*17,580,383	*24,264,912	7. Income after fixed charges	*85,012,105	*159,216,105
1,013,130	1,012,573	8. Contingent charges	5,068,355	5,065,567
*18,593,513	*25,277,485	9. Net income	*90,080,460	*164,281,672
16,882,694	16,922,054	10. Depreciation (Way and structures and Equipment)	84,145,193	84,058,780
1,086,636	956,087	11. Federal income taxes	7,536,346	4,536,660
		12. Dividend appropriations:		
12,585,945	11,737,701	12-01. On common stock	26,552,035	32,318,407
3,957,670	708,883	12-02. On preferred stock	8,773,876	5,255,786

Selected Asset Items	Balance at end of May 1939	Balance at end of May 1938
13. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707)	$645,520,942	$650,637,120
14. Cash	414,186,238	307,196,454
15. Demand loans and deposits	13,666,709	7,608,346
16. Time drafts and deposits	20,225,054	19,569,102
17. Special deposits	48,386,349	64,090,902
18. Loans and bills receivable	2,978,720	4,358,139
19. Traffic and car-service balances receivable	51,164,454	50,272,954
20. Net balance receivable from agents and conductors	47,542,153	43,331,914
21. Miscellaneous accounts receivable	119,897,424	132,107,274
22. Materials and supplies	324,177,087	363,939,903
23. Interest and dividends receivable	21,683,788	24,252,708
24. Rents receivable	1,398,079	1,645,709
25. Other current assets	4,411,393	4,317,270
26. Total current assets (items 14 to 25)	$1,069,717,448	$1,022,690,675

Selected Liability Items	Balance at end of May 1939	Balance at end of May 1938
27. Funded debt maturing within 6 months†	$174,482,288	$199,843,554
28. Loans and bills payable‡	245,388,587	239,874,504
29. Traffic and car-service balances payable	67,704,009	65,493,810
30. Audited accounts and wages payable	232,357,495	223,131,826
31. Miscellaneous accounts payable	61,051,394	68,365,418
32. Interest matured unpaid	863,926,357	712,627,244
33. Dividends matured unpaid	1,510,758	1,630,368
34. Funded debt matured unpaid	678,252,150	524,577,306
35. Unmatured dividends declared	16,812,861	12,298,017
36. Unmatured interest accrued	105,863,907	109,678,137
37. Unmatured rents accrued	40,003,066	38,105,188
38. Other current liabilities	22,830,672	32,714,826
39. Total current liabilities (items 28 to 38)	$2,335,701,256	$2,028,496,644
40. Tax liability (Account 771):		
40-01. U. S. Government taxes	$51,212,682	$59,028,516
40-02. Other than U. S. Government taxes	148,890,192	143,738,830

ø Represents accruals, including the amount in default.
† Includes payments which will become due on account of principal of long-term debt (other than that in Account 764, Funded debt matured unpaid) within six months after close of month of report.
‡ Includes obligations which mature not more than 2 years after date of issue.
* Deficit or other reverse items.

NET INCOME OF LARGE STEAM RAILWAYS WITH ANNUAL OPERATING REVENUES ABOVE $25,000,000

(Switching and Terminal Companies Not Included)

Name of railway	Net income after deprec. For the five months of 1939	Net income after deprec. For the five months of 1938	Net income before deprec. For the five months of 1939	Net income before deprec. For the five months of 1938
Alton R. R.	* $914,825	*$1,092,385	* $807,891	* $942,236
Atchison, Topeka & Santa Fe Ry. Systemø	* 4,484,558	* 5,944,455	445,847	* 988,496
Atlantic Coast Line R. R.	812,742	1,158,761	1,688,989	2,012,086
Baltimore & Ohio R. R.	* 6,072,088	*10,906,544	* 3,078,759	* 7,855,349
Boston & Maine R. R.	* 626,854	* 2,420,406	22,496	* 1,746,568
Central of Georgia Ry.†	* 1,190,532	* 1,456,993	* 835,404	* 1,100,108
Central R. R. of New Jersey	* 1,699,737	* 1,572,837	* 1,116,175	* 982,267
Chesapeake & Ohio Ry.	3,307,256	4,431,708	6,747,925	7,893,041
Chicago & Eastern Illinois Ry.‡	* 809,070	* 995,212	* 561,671	* 734,396
Chicago & North Western Ry.‡	* 8,405,819	* 9,992,414	* 6,341,626	* 7,878,341
Chicago, Burlington & Quincy R. R.	* 1,229,336	* 2,618,243	933,674	* 517,532
Chicago Great Western R. R.‡	* 483,616	* 1,102,692	* 259,424	* 878,655
Chicago, Milwaukee, St. Paul & Pacific R. R.‡	* 8,982,947	* 9,924,968	* 6,571,716	* 7,543,160
Chicago, Rock Island & Pacific Ry.‡	* 5,150,055	* 7,064,520	* 3,451,180	* 5,331,539
Chicago, St. Paul, Minneapolis & Omaha Ry..	* 1,557,976	* 1,368,423	* 1,315,996	* 1,122,936
Delaware & Hudson R. R.	497,140	* 711,726	920,619	* 274,939
Delaware, Lackawanna & Western R. R.	* 553,458	* 1,817,117	463,474	* 785,893
Denver & Rio Grande Western R. R.‡	* 2,797,222	* 3,239,321	* 2,293,205	* 2,733,752
Elgin, Joliet & Eastern Ry.	461,184	* 495,007	866,260	* 77,001
Erie R. R. (including Chicago & Erie R. R.)§	* 2,351,204	* 6,163,268	* 819,256	* 4,594,868
Grand Trunk Western R. R.	* 1,305,209	* 2,749,371	* 820,171	* 2,278,090
Great Northern Ry.	* 4,332,850	* 7,030,116	* 2,789,006	* 5,478,813
Illinois Central R. R.	* 1,065,640	* 1,514,913	1,694,072	1,186,474
Lehigh Valley R. R.	* 52,350	* 1,968,457	833,809	* 1,058,747
Long Island R. R.	* 1,391,084	* 1,218,267	* 900,739	* 729,625
Louisville & Nashville R. R.	763,006	* 1,061,950	2,568,095	733,438
Minneapolis, St. Paul & Sault Ste. Marie Ry.‡	* 3,531,100	* 3,338,770	* 3,023,569	* 2,826,344
Missouri-Kansas-Texas Lines	* 1,931,507	* 2,326,829	* 1,374,668	* 1,777,740
Missouri Pacific R. R.‡	* 7,155,231	* 7,960,175	* 5,339,285	* 6,121,724
New York Central R. R.¶	* 8,787,191	*15,115,074	* 2,189,220	* 8,419,598
New York, Chicago & St. Louis R. R.	* 154,726	* 1,620,518	500,788	* 905,162
New York, New Haven & Harttord R. R.‡	* 2,156,006	* 5,677,202	* 744,873	* 4,270,173
Norfolk & Western Ry.	6,414,171	3,731,225	8,502,880	5,807,336
Northern Pacific Ry.	* 4,574,463	* 6,057,366	* 3,163,956	* 4,645,970
Pennsylvania R. R.	1,467,448	* 4,791,759	12,415,578	5,653,848
Pere Marquette Ry.	* 505,927	* 1,785,946	481,941	* 785,735
Pittsburgh & Lake Erie R. R.	326,204	68,624	1,260,817	1,004,907
Reading Co.	1,197,830	108,037	2,493,984	1,414,228
St. Louis-San Francisco Ry.‡	* 5,241,012	* 6,187,771	* 3,960,168	* 4,885,905
St. Louis Southwestern Lines‡	* 815,397	* 847,435	* 557,752	* 588,135
Seaboard Air Line Ry.†	* 2,179,572	* 2,636,567	* 1,284,162	* 1,786,898
Southern Ry.	* 583,719	* 3,162,751	846,491	* 1,885,619
Southern Pacific Transportation System‖	* 4,814,230	*11,810,980	* 1,526,377	* 8,353,383
Texas & Pacific Ry.	136,367	42,377	636,596	539,915
Union Pacific R. R. (including leased lines)	1,562,251	643,271	4,678,216	3,697,207
Wabash Ry.†	* 2,553,798	* 3,709,511	* 1,660,596	* 2,812,996
Yazoo & Mississippi Valley R. R.	* 255,514	* 268,234	* 64,902	* 43,368

* Deficit.
† Report of receiver or receivers.
‡ Report of trustee or trustees.
§ Under trusteeship, Erie R. R. only.
ø Includes Atchison, Topeka & Santa Fe Ry., Gulf, Colorado & Santa Fe Ry., and Panhandle and Santa Fe Ry.
¶ Includes Boston & Albany, lessor to New York Central R. R.
‖ Includes Southern Pacific Company, Texas & New Orleans R. R., and leased lines. The report contains the following information: "Income reported hereon excludes offsetting debits and credits for rent for leased roads and equipment, and bond interest, between companies included herein. Operations of all separately operated solely controlled affiliated companies, during the corresponding periods resulted in a net deficit of $2,828,938 and $3,231,848, respectively. The 1939 deficit includes $211,172 for the month and $1,055,860 for the period, representing interest on bonds of such companies owned by the Southern Pacific Company not taken into income and, therefore, not included in the 1939 amounts reported against items 2 and 9 of this statement. The combined results for Southern Pacific Transportation System and separately operated solely controlled affiliated companies for the month amounted to a net income of $233,399, and for the period a net deficit of $6,587,307."

ment and that showing the net incomes or net deficits of roads having operating revenues above $25,000,000 are given in the accompanying tables.

New Committees in Adjustment Board Dispute

Names were announced last week of members of the new labor and management committees which will consider difficulties arising as a result of the publicity recently given decisions and proceedings of the National Railroad Adjustment Board. The new committees, which are expected to hold their first joint sessions in Chicago during the week of August 14, are the outgrowth of the preliminary discussions conducted on the part of management by a committee of railroad presidents.

The new labor committee will consist of eight members as follows: George M. Harrison, chairman of the Railway Labor Executives' Association; A. Johnston, grand chief engineer of the Brotherhood of Locomotive Engineers; J. A. Phillips, president of the Order of Railway Conductors; D. B. Robertson, president of the Brotherhood of Locomotive Firemen & Enginemen; V. O. Gardner, president of the Order of Railway Telegraphers; S. J. Hogan, president of the National Marine Engineers Beneficial Association; B. M. Jewell, president of the Railway Employees Department, American Federation of Labor; and J. G. Luhrsen, executive secretary of the Railway Labor Executives' Association. The Brotherhood of Railroad Trainmen, whose president, A. F. Whitney, is not a member of R. L. E. A., has had a representative at the joint-labor-management meetings held thus far and is expected to continue its participation in that manner.

The railroad committee consists of six members as follows: W. K. Etter, vice-president of the Atchison, Topeka & Santa Fe; J. T. Gillick, chief operating officer of the Chicago, Milwaukee, St. Paul & Pacific; R. C. Parsons, assistant vice-president of the Louisville & Nashville; H. D. Pollard, receiver for the Central of Georgia; J. G. Walber, vice-president of the New York Central; and H. A. Enochs, chief of personnel of the Pennsylvania.

June Volume of Truck Freight 26.2 Per Cent Above Last Year

The tonnage of freight moved by motor truck in June, while 1.8 per cent under the May total, was 26.2 per cent above that for June, 1938, according to the monthly survey compiled by American Trucking Associations, Inc. The A. T. A. index, based on the 1936 monthly average as 100, stood at 118.84 for June as compared with 125.16 for May and 91.28 for June of last year.

Comparable reports were received from 203 carriers in 36 states, reporting aggregate loadings of 1,016,397 tons in June as compared with 1,035,133 tons in May and 805,693 tons in June, 1938. Volume of all classes of commodities reported for June decreased, compared with May, with the exception of iron and steel, which showed a slight increase—less than one per cent—over the previous month and a 32.7 per cent increase over June, 1938. In the general merchandise class, which represented about 75 per cent of the total tonnage reported, June volume was 1.7 per cent under last month but 28.1 per cent over June, 1938. A decrease of 1.8 per cent under last month was disclosed in the movement of petroleum and petroleum products, but the current tonnage was 11.1 per cent over June a year ago. While the movement of cars and trucks by automobile transporters was 65.4 per cent greater than June, 1938, the volume reported for June of this year showed a decrease of 6 per cent under the previous month. This decrease, the largest reflected by any other class of carrier, the A. T. A. says, "was attributed in part to the confused labor situation prevailing in the automobile industry last month."

Included in the total tonnage were figures on the movement of household goods, tobacco, livestock, groceries, textile products, dairy products and machinery and parts. This miscellaneous group showed a 2.1 per cent decrease under May, 1939 and 12.4 per cent increase over June a year ago.

Commission Getting $40,000 for Cost-Finding Work

The House of Representatives on August 2 passed the Third Deficiency Appropriation Bill, carrying $40,000 for the cost-finding work of the Interstate Commerce Commission's Bureau of Statistics. This amount was recommended by the Bureau of the Budget and carried in the bill as reported from the House committee on appropriations, which turned down another commission request for an additional $30,000 to be used by its Bureau of Personnel Supervision and Management.

Meanwhile the record of the sub-committee's hearings on the bill was made public on August 1, showing that Chairman Eastman and Commissioner Splawn testified in support of the request for the $40,000 for cost-finding work. Chairman Eastman argued that the amount "while small, is to us of very great importance."

He went on to explain how cost of service has become an important factor in rate-making and how there has been "a continually increasing demand upon the part of shippers for accurate information in regard to costs of particular services." After referring to past commission proceedings in connection with cost accounting and to the study of the subject which he sponsored while co-ordinator of transportation, Mr. Eastman went on to emphasize how "the need for cost finding has developed tremendously" because of the competition which the railroads have lately encountered.

"At the present time," he added, "the railroads are taking a far more active stand in the competition than they have hitherto. They are going out after the traffic they have lost and are cutting the rates for the purpose of getting it back. That creates what you might call rate wars between the trucks and the railroads, and the water lines are also involved in the matter.

"The problem in connection with that matter is the fixing, on the part of the commission, of minimum rates which will prevent destructive competition, and also prevent the various carriers going so low in their warfare that they throw a burden upon other forms of transportation, or endanger their own financial position, which, of course, in the case of the railroads, is bad enough as it is at present; and it is not any better so far as trucks, in general, are concerned."

Explaining the present cost-finding set up in the Bureau of Statistics, Mr. Eastman called it "just a nucleus of a unit" in charge of "an exceedingly competent man, Mr. Arthur White. . . ." Later Commissioner Splawn, whom Mr. Eastman introduced as the commissioner "in immediate charge of this work," told the sub-committee that the additional $40,000 would permit the employment of 11 new people, who would become part of the Bureau's permanent staff. Previously, Mr. Splawn had expressed the hope that the sub-committee would not get the impression that the money was needed "because of interterritorial studies, or water studies." He went on to explain that "it is needed to carry on work now current," adding that the commission may have to ask for more if S. 2009 is finally enacted with provisions for the regulation of water carriers by the I. C. C. and the mandate to make a study of interterritorial rates.

Stock Kayoed in Rio Grande Plan

(*Continued from page 222*)

be assumed, $2,795,000; note (including accrued interest) to Chase National Bank to be extended, $1,749,917; note to Railroad Credit Corporation to be extended if not paid in cash, $278,000. These comprise a total fixed interest debt of $34,226,061. Next come 4½ per cent income mortgage bonds in the amount of $42,006,449; new five per cent preferred stock, $33,295,940; and new no-par common stock at $100 a share, $37,904,904. Ahead of dividends on the preferred stock would be total fixed and contingent charges of $4,093,842, including provisions for capital and sinking funds; ahead of dividends on the common would be another $1,664,797 for the preferred dividend, or a total of $5,758,639. As the commission calculates it from data of record the earnings for the three-year period 1936 to 1938, inclusive, would have provided a coverage of 1.38 for the fixed interest requirements, plus the maximum payment ($750,000) into the capital fund. Dividends on the new preferred stock, which would have voting rights, would be cumulative if earned, but otherwise non-cumulative.

The treatment to be accorded the R. F. C. was outlined above, while that to be accorded holders of equipment obligations, the Chase National Bank and the Railroad Credit Corporation is indicated in the foregoing list of items in the new capital set up. In other words the equipment obligations would be assumed, the Chase note would be extended as would that of R. C. C. unless it be paid in cash at the discretion of the reorganization committee.

For each $1,000 bond and all unpaid interest thereon, other holders would receive the following approximate amounts of new securities: Rio Grande Western first-trust bonds, $1,140 of new 4½ per cent income bonds; Rio Grand Western consolidated mortgage bonds, $1,150, par value, of new five per cent preferred stock; Junction first mortgage bonds, $1,154 of new 4½ per cent income bonds, plus $14.17 in cash representing 17 months interest at one per cent; D. & R. G. consolidated mortgage 4s, $406 of new 4½ per cent income bonds, $290, par value, of new five per cent preferred stock and 4.64 shares of new common stock; D. & R. G. consolidated mortgage 4½s, $413 of new 4½ per cent income bonds, $295, par value of new five per cent preferred stock and 4.75 shares of new common stock; D. & R. G. W. refunding and improvement mortgage 5s, $416 of new 4½ per cent income bonds; $297, par value, of new five per cent preferred stock and 4.75 shares of new common stock; D. & R. G. W. refunding and improvement mortgage 6s, $429 of new 4½ per cent income bonds, $306, par value, of new five per cent preferred stock and 4.9 shares of new common stock; D. & R. G. W. general mortgage bonds, 4.15 shares of new common stock. Holders of the 460 shares of Denver & Salt Lake outstanding in the hands of the public would receive in exchange therefor, $46,000 of the new 4½ per cent income bonds. Holders of unsecured claims arising prior to the trusteeship would receive new common stock on the basis of one share for each $200 of claim allowed by the court.

Discussing contentions of the Missouri Pacific and "numerous civic bodies" (the Western Pacific was not represented in the proceeding) that the plan should provide a means whereby the proprietary roads might retain control of the reorganized D. & R. G. W., the commission took the position that such questions are not for it to decide. It does not consider that it has the duty of deciding "for the new owners what affiliations with other systems will be most advantageous to the new company," nor of fixing a price "for any stock which may be offered to the Missouri Pacific, Western Pacific, or other railroad companies." The plan does, however, provide for an arrangement whereby the common stock of the reorganized company would be deposited for 10 years under an escrow agreement with the reorganization committee, as voting trustees, having power to sell the stock with the consent of holders of escrow receipts representing a majority of the stock on deposit and subject to I. C. C. approval.

As the foregoing indicates the commission provides for a reorganization committee of five members to carry out the plan; also, provision is made for the execution of the plan by a sale of the properties at an upset price to be fixed by the court.

Chairman Eastman, concurring in part, said that he concurred except as indicated in his separate expression in the Western Pacific reorganization case. There, as noted in last week's issue, he and Commissioner Miller objected to the capital fund provision and the limitation on the issuance of first mortgage bonds. Here Mr. Miller, also concurring in part, again objected to the mandatory capital fund, but he also thought the total capitalization authorized is too high. Furthermore he found applicable to the D. & R. G. W. case remarks he made in the Spokane International case regarding "the desirability of setting up sinking fund payments in terms of a percentage of earnings, conditions regarding the issuance of fixed interest bonds, a participation provision rather than an cumulative requirement for income bonds and the use of no-par preferred stock." Commissioner Splawn, also concurring in part, agreed with the findings of probable earnings for the future, but he found it difficult to follow the discussion of priorities. "Apparently," he said, "an effort is made to substitute for bonds on which interest is now being earned a security which will obviously have much less value. It is not made clear that such a substitution would be lawful."

I. C. C. Safety Code For All Trucks?

(*Continued from page 223*)

which stipulates that driving time shall include all time spent on a moving vehicle and any interval not in excess of 10 minutes in which the driver is on duty but not on a moving vehicle; stops in excess of 10 minutes may be deducted from driving time.

In connection with the exemptions the examiner recalled how he emphasized throughout the hearings that there were two major aspects of the investigation—the determination of the need for federal regulation, and, if such need were found to exist, the determination of what modifications, if any, should be made in the common and contract carrier regulations to make them reasonable for private carriers. "Unfortunately," he observed, "the majority of the witnesses paid no attention" to the latter phase. In all Examiner Snow made 20 recommended findings of fact, set forth in the proposed report as follows:

1. That approximately 3,000,000 motor vehicles

are operated in interstate and intrastate commerce by private carriers of property.

2. That approximately 20 per cent of this total is used in transporting property in interstate or foreign commerce, which exceeds the number of motor vehicles operated by common and contract carriers in such commerce.

3. That under the same conditions a motor vehicle operated by a private carrier of property is as great a potential hazard to safety as a motor vehicle operated by a common or contract carrier and should be subjected to the same regulation.

4. That the several States do not impose the same regulations upon the operation of trucks by private carriers of property as they do upon trucks operated by common and contract carriers.

5. That 28 States do not in any way regulate or limit the hours of service of drivers of motor vehicles operated by private carriers of property.

6. That it is unsafe and in fact extremely hazardous to permit a fatigued driver to operate a truck upon the highways of the country and that the long hours which are dangerous per se are prevalent in the private carrier industry.

7. That a number of States permit boys of 16 years of age to drive trucks, and many States permit boys under 21 years of age to do so.

8. That it is dangerous to permit an individual under 18 years of age to drive or operate trucks on the highways of the country and many drivers of trucks operated by private carriers of property in interstate and foreign commerce are under 18 years of age.

9. That it is dangerous to permit an individual under 21 years of age to drive or operate a heavy truck on the main highways of the country where traffic is heavy and exposure to accidents is great; and many drivers of trucks operated by private carriers under such conditions are under 21 years of age.

10. That many States do not require trucks operated by private carriers of property to be equipped in a manner deemed necessary for the safe operation of such vehicles and for the protection of the public, and many trucks operated by private carriers of property are not so equipped.

11. That it is dangerous to permit individuals who are not in good physical condition to drive or operate trucks over highways where the traffic is heavy and exposure to accidents is great.

12. That based upon the specific findings hereinabove recommended there is need for Federal regulation of private carriers of property to promote safety of operation of motor vehicles used by such carriers in the transportation of property in interstate or foreign commerce.

13. That with the exceptions referred to in subsequent recommended findings, the hours of service rules and regulations prescribed for drivers of common and contract carriers by the Commission's report and order in Ex Parte No. MC-2, are reasonable requirements to promote safety of operation by private carriers of propperty, engaged in interstate or foreign commerce, and should be prescribed for such carriers.

14. That with the exceptions referred to in subsequent recommended findings, the safety rules and regulations prescribed by the Commission's report and order in Ex Parte No. MC-4, are reasonable requirements to promote safety of operation by private carriers of property engaged in interstate or foreign commerce and should be prescribed for such carriers.

15. That motor vehicles controlled and operated by any farmer and used in the transportation of his agricultural commodities and products thereof or in the transportation of supplies to his farm, which vehicles are herein termed farm trucks, are operated under conditions substantially different from those under which motor vehicles are operated by other private carriers of property and by common and contract carriers.

16. That because of such different conditions, individuals between the ages of 18 and 21 years should be permitted to drive and operate farm trucks of a gross weight not in excess of 10,000 pounds (the vehicle and load both included). Rule 1.21 of the safety rules and regulations prescribed by the Commission as so amended should be prescribed for private carriers of property operating farm trucks in interstate or foreign commerce.

17. That because of said conditions surrounding the operation of farm trucks, a physical examination should not be required for drivers of such trucks. Rule 1.3 of the safety rules and regulations should not be prescribed for private carriers of property operating farm trucks in interstate or foreign commerce.

18. That because of said conditions surrounding the operation of farm trucks, Rule 2.6 of the safety rules and regulations prohibiting the transportation of passengers upon trucks except, under certain conditions, should not be prescribed for private carriers of property operating farm trucks in interstate or foreign commerce.

19. That because of said conditions surrounding the operation of farm trucks, it is unreasonable to limit the hours of duty of a driver of a farm truck but his hours of driving should be limited to a total of 50 hours in any one week. Rule 3, paragraphs (a) and (b) of the hours of service rules and regulations as so amended should be prescribed for private carriers of property operating farm trucks in interstate or foreign commerce.

20. That because of the conditions under which work trucks of the type referred to in this report are operated, it is unreasonable to require drivers of such trucks to maintain a driver's log. Rule 5 of the hours of service rules and regulations should not be made applicable to such operations.

The commission's reports in Ex Parte No. MC-2 covering hours of service for drivers of common and contract carrier vehicles were reviewed in the *Railway Age* of July 30, 1938, page 188, and in the issue of February 4, page 238. Its revised rules and regulations governing qualifications of employees and safety of operation and equipment were promulgated in the Ex Parte No. MC-4 report and order which was reviewed in the *Railway Age* of June 10, page 1000. These are the two sets of regulations which, with the exceptions noted, the examiner would have applied also to private trucks operating in interstate commerce.

Meetings and Conventions

The following list gives names of secretaries, dates of next or regular meetings and places of meetings:

AIR BRAKE ASSOCIATION.—R. P. Ives, Westinghouse Air Brake Co., 350 Fifth Ave., New York, N. Y.

ALLIED RAILWAY SUPPLY ASSOCIATION.—J. F. Gettrust, P. O. Box 5522, Chicago, Ill. Annual meeting, October 17-19, 1939, Hotel Sherman, Chicago, Ill.

AMERICAN ASSOCIATION OF FREIGHT TRAFFIC OFFICERS.—W. R. Curtis, F. T. R., M. & O. R. R., 327 S. La Salle St., Chicago, Ill.

AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. P. Soebbing, 1431 Railway Exchange Bldg., St. Louis, Mo. Annual Meeting, October 17-19, 1939, Philadelphia, Pa.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. J., 143 Liberty St., New York, N. Y.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—F. O. Whiteman, Union Station, St. Louis, Mo. Annual meeting, 1940, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill. Annual meeting, January 19-20, 1940.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C., I. & L. Ry., 836 S. Federal St., Chicago, Ill. Annual meeting, October 9-12, 1939, Hotel St. Francis, San Francisco, Cal.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill. Annual meeting, October 17-19, 1939, Hotel Stevens, Chicago, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION. J. M. Hurley, N. Y. O. & W. Ry., Middletown, N. Y.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in co-operation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1940, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—M. W. Jones, Baltimore & Ohio R. R., 1105 B. & O. R. R. Bldg., Baltimore, Md. Fall meeting, October 27-28, 1939, The Greenbrier Hotel, White Sulphur Springs, W. Va.

AMERICAN RAILWAY TOOL FOREMEN'S ASSOCIATION.—G. G. Macina, C., M., St. P. & P. R. R., 11402 Calumet Ave., Chicago, Ill.

AMERICAN SHORT LINE RAILROAD ASSOCIATION. R. E. Schindler, Tower Bldg., Washington, D. C. Annual meeting, October 23-24, 1939, Hotel Continental, Kansas City, Mo.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York, N. Y. Fall meeting, September 4-8, 1939, Hotel Pennsylvania, New York, N. Y. Annual meeting, December 4-8, 1939, Hotel Bellevue-Stratford, Philadelphia, Pa.
Railroad Division.—Marion B. Richardson, 21 Hazel Ave., Livingston, N. J.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York, N. Y. Annual meeting, August 9-16, 1939, Biltmore Hotel, Los Angeles, Cal., and Fairmont Hotel and Mark Hopkins Hotel, San Francisco, Cal.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington, D. C. Annual meeting, January 23-25, 1940, Hotel Coronado, St. Louis, Mo.

ASSOCIATION OF AMERICAN RAILROADS. — H. J. Forster, Transportation Bldg., Washington, D. C.
Operations and Maintenance Department.—Transportation Bldg., Washington, D. C.
Operating-Transportation Division. — L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Operating Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Fire Protection and Insurance Section.—W. F. Steffens, New York Central, Room 3317, 230 Park Avenue, New York, N. Y.
Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago, Ill.
Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Protective Section.—J. C. Caviston, 30 Vesey St., New York, N. Y.
Safety Section. — J. C. Caviston, 30 Vesey St., New York, N. Y.
Telegraph and Telephone Section. — W. A. Fairbanks, 30 Vesey St., New York, N. Y.
Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1940, Palmer House, Chicago, Ill.
Construction and Maintenance Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Annual meeting, March 12-14, 1940, Palmer House, Chicago, Ill.
Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago, Ill. Next meeting, October 24, 1939, Hotel Sherman, Chicago, Ill.
Signal Section.—R. H. C. Balliet, 30 Vesey St., New York, N. Y.
Mechanical Division.—V. R. Hawthorne, 59 E. Van Buren St., Chicago, Ill.
Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago, Ill. Annual meeting, October 24-26, 1939, Hotel Sherman, Chicago, Ill.
Purchases and Stores Division.—W. J. Farrell, 30 Vesey St., New York, N. Y.
Freight Claim Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago, Ill.
Motor Transport Division.—George M. Campbell Transportation Bldg., Washington, D. C.
Car-Service Division. — E. W. Coughlin, Transportation Bldg., Washington, D. C.
Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington, D. C.
Accounting Division.— E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, 1940, White Sulphur Springs, W. Va.
Treasury Division.—E. R. Ford, Transportation Bldg., Washington, D. C. Annual meeting, September 21-22, 1939, Hotel Pennsylvania, New York, N. Y.
Traffic Department. — A. F. Cleveland, Vice-President, Transportation Bldg., Washington, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Claim Agent, Alton R. R., 340 W. Harrison St., Chicago, Ill. Annual meeting, 1940, Providence, R. I.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—W. S. Carlisle, National Lead Company, 900 W. 18th St., Chicago, Ill. Meets with American Railway Bridge and Building Association.

CANADIAN RAILWAY CLUB. — C. R. Crook, 4468 Oxford Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, MO.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel Mayfair, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—Frank Kartheiser, Chief Clerk, Mechanical Dept., C. B. & Q., Chicago, Ill. Annual meeting, October 17-19, 1939, Hotel Sherman, Chicago, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—G. K. Oliver, 2514 W. 55th St., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—MRS. M. D. Reed, 1817 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June,

July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—J. T. Bougher, 424 W. 33rd St., (11th floor), New York, N. Y. Next meeting, September 28, 1939, Hotel Governor Clinton, New York, N. Y.

INTERNATIONAL RAILWAY GENERAL FOREMEN'S ASSOCIATION.—F. T. James, Master Mechanic, Delaware, Lackawanna & Western, Hoboken, N. J. Annual meeting, October 17-19, 1939, Hotel Sherman, Chicago, Ill.

INTERNATIONAL RAILWAY MASTER BLACKSMITHS' ASSOCIATION.—W. J. Mayer, Michigan Central R. R., Detroit, Mich. Annual meeting, October 17-19, 1939, Hotel Sherman, Chicago, Ill.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany, N. Y. Annual meeting, October 17-19, 1939, Hotel Sherman, Chicago, Ill.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Clyde S. Bailey, New Post Office Bldg., Washington, D. C. Annual meeting, August 22-25, 1939, Olympic Hotel, Seattle, Wash.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago, Ill. Exhibit in connection with A. R. E. A. Convention, March 11-14, 1940, International Amphitheatre, Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Touraine, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York, N. Y. Regular meetings, third Friday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box 3275, San Francisco, Cal. Regular meetings, second Thursday of each month, alternately at San Francisco and Oakland, except June at Los Angeles and October at Sacramento.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill. Annual dinner, November, 1939, Hotel Stevens, Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRICAL SUPPLY MANUFACTURERS' ASSOCIATION.—J. Mc C. Price, Allen-Bradley Company, 600 W. Jackson Blvd., Chicago, Ill. Next meeting, October 24-26, 1939, Hotel Sherman, Chicago, Ill.

RAILWAY FIRE PROTECTION ASSOCIATION.—(See Association of American Railroads.—Fire Protection and Insurance Section.)

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, 1255 Old Colony Bldg., Chicago, Ill. Annual meeting, October 17-19, 1939, Hotel Sherman, Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 1941 Oliver Bldg., Pittsburgh, Pa.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with Telegraph and Telephone section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 903 Syndicate Trust Bldg., St. Louis, Mo.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—C. A. Lichty, 319 N. Waller Ave., Chicago, Ill. Annual meeting, September 19-21, 1939, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York, N. Y. Meets with A. A. R., Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga., Ry., Savannah, Ga.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q. & C. Company, 59 E. Van Buren St., Chicago, Ill. Meets with Roadmasters' and Maintenance of Way Association.

UNITED ASSOCIATIONS OF RAILROAD VETERANS.—Roy E. Collins, 112 Hatfield Place, Port Richmond, Staten Island, N. Y. Annual meeting, October 14-15, 1939, Hotel Roanoke, Roanoke, Va.

WESTERN RAILWAY CLUB.—W. L. Fox (Executive Secretary), Room 822, 310 South Michigan Ave., Chicago, Ill. Regular meetings, third Monday of each month, except June, July, August and September, Hotel Sherman, Chicago, Ill.

Equipment and Supplies

July Equipment Orders

Railroad equipment manufacturers received domestic orders for a total of 4 Diesel-electric locomotives and 39 passenger-train cars during July. These additions bring total equipment orders for the year thus far to 156 locomotives and 174 passenger-train cars. No freight cars were ordered during the month and the total for the year thus far in this category, therefore, remains at 9,077 units. July, 1938, brought even fewer orders to equipment manufacturers when only 3 locomotives were ordered, the car market being entirely quiescent.

The carriers ordered 10,575 tons of rail during the month, bringing the total for the year thus far to 526,383 tons.

Domestic Equipment Orders Reported in Issues of The Railway Age in July, 1939 (Excluding July 1)

LOCOMOTIVES

Date	Name of Company	No.	Type	Builder
July 15	Atlantic Coast Line	2	Diesel-electric	Electro-Motive Corp.
July 22	Seaboard Air Line	2	Diesel-electric	Electro-Motive Corp.

PASSENGER-TRAIN CARS

July 15	Atlantic Coast Line	14		Edward G. Budd Mfg. Co.
July 15	Atchison, Topeka & Santa Fe	1	Dining	Pullman-Standard
		1	Lounge-lunch counter-dining	Pullman-Standard
		2	Baggage-chair	Pullman-Standard
		1	Baggage-dormitory chair	Pullman-Standard
		1	Chair-observation	Pullman-Standard
		1	Club-lounge	Pullman-Standard
		2	Post Office	Edward G. Budd Mfg. Co.
		2	Club-chair	Edward G. Budd Mfg. Co.
July 22	Seaboard Air Line	14		Edward G. Budd Mfg. Co.

Mop Seeks Authority to Buy 20 Buses

Authority to advance $150,000 to the Missouri Pacific Transportation Company, bus line subsidiary of the Missouri Pacific, for the purchase of 20 new buses, was asked by Guy A. Thompson, trustee of the railroad, in a petition filed in the federal district court at St. Louis on July 28. The trustee set out in his petition that the bus line had been advanced $460,000 previously and of this amount $240,000 had been repaid. The new equipment would increase the number of buses of the transportation company from 129 to 133, as 16 old units would be removed from service.

The trustee was authorized by the court to spend $294,000 for the relocation of tracks at Vidalia, La., where army engineers are planning a new levee which will necessitate moving the railroad's facilities further away from the Mississippi river. The government will reimburse the railway for any funds spent to remove tracks and equipment.

FREIGHT CARS

THE NEW YORK, CHICAGO & ST. LOUIS has ordered 10 gondola type container cars of 110 tons' capacity from the Pullman Standard Car Manufacturing Company. Inquiry for this equipment was reported in the *Railway Age* of July 15.

THE NEW YORK, NEW HAVEN & HARTFORD is now inquiring for 25 caboose cars. In the *Railway Age* of July 22, page 161, it was announced that the road would probably take this action.

SIGNALING

IOWA.—Sealed bids will be received by the Iowa State Highway Commission at its office in Ames, Iowa, until 10:00 a. m., August 8, for furnishing signal material required for the protection of 17 grade crossings on the Chicago Great Western. C. Coykendall, administration engineer, Iowa State Highway Commission, Ames.

Supply Trade

The Clarence L. Boyd Company, Guthrie, Okla., has been appointed distributor for Oklahoma by the **Bucyrus Erie Company,** South Milwaukee, Wis.

Richard C. Poucher has been appointed to take charge of sales engineering problems for the **Research Products Corporation,** Air Filter division, in Ohio, Michigan, Pennsylvania and New York. He was formerly with the Diamond Iron Works, Inc.

Thomas V. Brooke has been appointed sales engineer of the **Lincoln Electric Railway Sales Company** at its Chicago office, 310 South Michigan avenue. In last week's issue, it was erroneously reported that Mr. Brooke was made sales engineer of the Lincoln Electric Company. He was formerly a research engineer for the latter.

Emmett J. Fallon, who has been elected president of the **Pettibone Mulliken Company,** Chicago, as reported in the *Railway Age* of July 15, graduated from De Paul University in 1913. Later he organized the Fallon Company and engaged in railroad contracting work until 1929, when he organized and became president of the Union Contracting and Engi-

neering Company, Chicago. In 1935, he was elected vice-president of the Des Moines Foundry & Machinery Company and the Grinnel Washing Machinery Cor-

Emmett J. Fallon

poration, with headquarters at Chicago, which positions he has held until his recent election.

Frederick M. Gillies, assistant general superintendent of the **Indiana Harbor Works** of **Inland Steel Company** for the past nine years, has been appointed general superintendent, succeeding **Henry R. deHoll.** Mr. deHoll retired, effective August 1, as general superintendent after 26 years of service, but will remain with Inland in a consulting capacity.

Philip M. Guba, manager of sales, Chicago district sales office of the **Carnegie-Illinois Steel Corporation** since January, 1938, has been appointed eastern sales manager, with headquarters at New York and Pittsburgh, Pa. Specifically, he will co-ordinate sales activities of the company in the eastern area, including offices at Boston, Mass., Hartford, Conn., New York, Philadelphia, Pa., Baltimore, Md., and Washington, D. C. Mr. Guba will be

Philip M. Guba

succeeded at Chicago by **G. A. Price,** present manager of sales, bar, strip, and semi-finished materials division, general sales department, who in turn will be succeeded by **T. J. Bray, Jr.,** manager of sales Pittsburgh district. **J. G. Armstrong, Jr.,** assistant manager of sales, Pittsburgh district, will succeed Mr. Bray.

Mr. Guba has been connected with sales in the steel industry since 1910. From 1918 to 1933, he was sales official of the Donner Steel Company and later of the Republic Steel Corporation. He began his association with Carnegie-Illinois in March, 1933, as assistant manager of sales at the Detroit, Mich., office, becoming manager of sales at that office in March, 1935.

OBITUARY

Col. Anson Lee Bolte, who with William Waugh, founded the Waugh Equipment Company in 1908, died on July 24 in the Walter Reed hospital in Washington, D. C., at the age of 79 years. Until the company was sold to A. J. Pizzini and the headquarters of the company moved from Chicago to New York, Mr. Bolte served as vice-president.

Carl Mosier, vice-president of the Union Asbestos & Rubber Company, Chicago, who died in that city on July 17 following a heart attack, was born in Oshkosh, Wis., on April 18, 1888. After

Carl Mosier

completing a business course, he entered the employ of the Harriman Lines in the maintenance and operation department, where he served in a clerical capacity from 1906 to 1911. In the latter year, he became secretary to the chairman of the Board of the Southern Pacific, with headquarters at New York, and in 1912, became secretary to the president of the Illinois Central, and later secretary to the president of the Chicago & Alton. Still later he was promoted to assistant purchasing agent of the Chicago & Alton, which position he held until 1915, when he resigned to become associated with L. L. Cohen in the formation of the Union Asbestos & Rubber Company, as secretary-treasurer. In 1929, he was elected vice-president.

Charles E. Robinson, who has been connected with the Baldwin Locomotive Works since 1899, died on July 20 at the age of 62, as the result of an automobile accident which occurred on July 9. Mr. Robinson at the time of his death was manager of the Engineering department, a branch of the business in which he had held many positions during his 40 years with Baldwin.

Financial

BALTIMORE & OHIO.—*Plan for Adjustment of Interest and Maturities.*—A three-judge federal court at Baltimore, Md., on August 1, approved the filing of this road's plan for readjustment of interest and extension of securities on bonds and notes under the terms of the Chandler Act, which was passed by Congress last week. The petition to the court was filed by the Baltimore & Ohio late on the afternoon of Friday, July 28, but a few hours after President Roosevelt signed the bill designed to protect roads seeking voluntary adjustment of obligations.

In their petition the railroad's attorneys asked for immediate action on their plea to prevent the forcing of the road into receivership or trusteeship by action of dissenting creditors. The court, composed of District Judge W. C. Chesnut of Baltimore, A. A. Dobie of the western district of Virginia and J. J. Parker of the fourth federal circuit court, issued three of the orders asked: (1) approval of the form of the petition for readjustment and declaration of its validity; (2) an injunction restraining any legal effort to enforce payment on securities; and (3) authorization for the Baltimore & Ohio management to provide funds for preliminary expenses, subject to court approval at a later date.

The court gave the railroad until August 18 to send out notices and set September 18 as the day for a hearing on the merits of the petition itself. On the witness stand G. M. Schriver, senior vice-president of the road, pointed out that the B. & O.'s readjustment plan had already been assented to by holders of 87.81 per cent of its outstanding obligations. (Under the Chandler Act the assent of 75 per cent of holdings is required for submission of a petition to the court). It was pointed out at the hearing that the company is faced with maturities during this year and 1940 which might force it into bankruptcy unless it receives protection under the Chandler Act.

The plan was summarized in the *Railway Age* of September 10, 1938.

CHICAGO & EASTERN ILLINOIS.—*Trustee Appointed.*—Benjamin Wham, a Chicago attorney, has been appointed trustee of the Chicago & Eastern Illinois to succeed Charles M. Thomson, who was recently appointed trustee of the Chicago & North Western.

ILLINOIS CENTRAL.—*R. F. C. Loan.*—This road has petitioned the Interstate Commerce Commission for a modification of the recent order authorizing an extension of its $35,170,000 loan from the Reconstruction Finance Corporation so that the applicant, in lieu of making the required annual payment of $351,700 to R. F. C. in curtailment of the loan, may purchase its own bonds up to that amount in the open market and deliver such bonds to R. F. C. as additional collateral for the loan.

CHICAGO, ROCK ISLAND & PACIFIC.—*Acquisition.*—This road has applied to the Interstate Commerce Commission for au-

thority to acquire the 75-mile segment of the Gulf, Texas & Western between Jacksboro, Texas, and Seymour. The commission recently authorized the G. T. & W. to abandon its entire line on condition that it agree to sell to any responsible person offering within 90 days to take over any portion of the line at a price equal to the net salvage value. The application states that the Rock Island has agreed with officers of the G. T. & W. and trustees of the St. Louis-San Francisco that a fair price for the segment involved would be $140,135.

Missouri Pacific.—*Acquisition.*—This road has applied to the Interstate Commerce Commission for authority to extend its line by the acquisition and operation of approximately one mile of track, together with its sidings and certain real estate, of the Fort Smith & Western in Fort Smith, Ark.

Mount Vernon Terminal.—*Acquisition and Trackage Rights.*—The Interstate Commerce Commission, Division 4, has authorized the proposed Mount Vernon Terminal Railway Company, Inc., to acquire and operate a 1.5-mile line extending from Mount Vernon, Wash., to North Mount Vernon; and to operate under trackage rights over the Puget Sound & Cascade's six-mile line from North Mount Vernon to Clear Lake and over 0.5 miles of the Puget Sound Pulp & Timber Company's line from North Mount Vernon to its terminus. The proposal, an aftermath of the recent abandonment by the Puget Sound & Cascade of its entire 28-mile line, is designed to continue a switching service to industries at Mount Vernon and "prolong freight service" to logging operations at Clear Lake.

Norfolk & Portsmouth Belt Line.—*Notes.*—This company has applied to the Interstate Commerce Commission for authority to issue 1½ per cent serial promissory notes in aggregate amount of $700,000 to be exchanged for a like amount of 2½ per cent notes.

Terminal Railroad Association of St. Louis.—*Bonds.*—This company has applied to the Interstate Commerce Commission to issue and sell $7,000,000 of refunding and improvement bonds, series B, bearing a rate of interest not in excess of 3½ per cent and maturing on July 1, 1974. Proprietory railroads of the Association have each applied for authority to guarantee one-sixteenth of the interest and sinking fund payments, except the Missouri Pacific which would guarantee two-sixteenths.

Average Prices of Stocks and Bonds

	Aug. 1	Last week	Last year
Average price of 20 representative railway stocks..	30.03	30.38	28.87
Average price of 20 representative railway bonds..	60.27	60.34	61.42

Dividends Declared

Alabama & Vicksburg.—Capital, $3.00, payable October 1 to holders of record September 8.

Cleveland & Pittsburgh.—Guaranteed, 50¢, quarterly; Preferred 87½¢, quarterly, both payable September 1 to holders of record August 10.

Vicksburg, Shreveport & Pacific.—Common, $2.50; 5 Per Cent Preferred, $2.50, both payable October 1 to holders of record September 8.

Wheeling & Lake Erie.—5½ Per Cent Preferred, $1.38; Prior Lien, $1.00, quarterly, both payable August 1 to holders of record July 26.

Railway Officers

FINANCIAL, LEGAL AND ACCOUNTING

J. N. Davis, commerce counsel of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters at Chicago, has been promoted to general attorney, with headquarters at Seattle, Wash., to succeed **A. N. Whitlock,** who has been promoted to general counsel, as reported in the *Railway Age* of July 22. **C. L. Taylor,** assistant general counsel, with headquarters at Chicago, has been promoted to commerce counsel, to replace Mr. Davis, while **W. L. Hunter,** assistant general solicitor at Chicago succeeds Mr. Taylor, and **R. W. Spangenburg,** chief clerk to the assistant general solicitor, replaces Mr. Hunter.

EXECUTIVE

George H. Smith, assistant comptroller of the Chicago & Eastern Illinois, has been promoted to assistant to the president. Mr. Smith was born near St. Elmo, Ill., on March 29, 1891. In 1910 he entered the employ of the Chicago, Burlington & Quincy, serving as stenographer to the resident engineer in charge of construction

George H. Smith

of the Burlington line from Herrin, Ill. to Metropolis. Six months later he entered the employ of the Chicago & Eastern Illinois as a stenographer to the division engineer at Salem, Ill. He held various positions from that of timekeeper to chief division accountant while at Salem. He was transferred to the comptroller's office at Chicago in 1916, serving as traveling accountant. Later he became general accountant, and in 1921 was made chief clerk to the comptroller. On July 1, 1938, he was made assistant comptroller.

Howard M. Biscoe, vice-president of the Boston & Albany at Boston, Mass., whose retirement on July 31 was reported in the *Railway Age* of July 29, was born on July 3, 1869, at Westboro, Mass. Mr. Biscoe was graduated from Yale University in 1892 and began railroad work that year in the ticket auditor's office of the Boston & Albany. In 1894 he went with the Central Vermont, serving in the general freight office until May, 1895, when he returned to the service of the Boston & Albany as clerk in the general traffic manager's office. From April, 1898, to May, 1905, Mr. Biscoe was foreign freight agent of the B. & A. at Boston, later becoming general freight agent. He was assistant freight traffic manager from February, 1910, to June 3, 1911, when he became traffic manager. On September 1, 1913, he was appointed vice-president in charge of the Boston & Albany, which position he held until his retirement, except for the period of federal control, January, 1918, to February, 1920, when he served as federal manager.

TRAFFIC

A. Tansley, traveling passenger agent of the Chicago, Milwaukee, St. Paul & Pacific, with headquarters in Chicago, has been promoted to district passenger agent, with headquarters in San Francisco, Cal., to succeed **R. F. Randall,** who died on July 2.

Edwin N. Hambly, who has been promoted to general freight agent of the Erie, with headquarters at Cleveland, Ohio, as reported in the *Railway Age* of July 29, was born at Honesdale, Pa., and entered railway service with the Erie in July, 1906. After holding various positions in the operating department, he was transferred to the general freight department in October, 1912. On June 1, 1927, he was promoted to chief of the Tariff Bureau, and on April 1, 1932, was promoted to assistant general freight agent, with headquarters at Cleveland, which position he held until July 15, 1939, when he was promoted to general freight agent.

George H. Asper, assistant general passenger agent of the Chicago, Rock Island & Pacific, with headquarters at Chicago, retired on July 31, at the age of 71, after 53 years railway passenger service, 47 of which have been with the Rock Island. Mr. Asper was born in Campbellsville, Ky., in 1868 and at the age of 18 entered railway service as a clerk for the Cincinnati, New Orleans and Texas Pacific at Louisville, Ky. He was promoted to ticket clerk in the following year and was employed by the Louisville & Southern as a ticket clerk in 1888 and by the Chicago, Indianapolis & Louisville in 1889 as a rate clerk. In 1890, he entered the employ of the Rock Island as a rate clerk, in 1899 went with the Denver & Rio Grande Western as chief clerk at Salt Lake City, and returned to the Rock Island at Chicago in 1901, where he served as chief rate clerk, assistant chief clerk, chief clerk, and secretary to the vice-president and passenger traffic manager. In 1920, he was promoted to assistant general passenger agent.

Earl E. Strickland, general freight agent of the Chicago, Rock Island & Pacific, with headquarters at Kansas City, Mo., has been promoted to assistant freight traffic manager in charge of solicitation,

with headquarters at Chicago, to succeed **J. W. Hill,** who resigned to become general traffic manager of the Denver & Rio Grande Western. Mr. Strickland has been

Earl E. Strickland

in the service of the Rock Island for 31 years, starting as city freight agent in Kansas City, where he was born in 1885. During the World War, Mr. Strickland served as First Lieutenant in field artillery. In 1938, he was appointed assistant general freight agent, and on February 1, became general freight agent at Kansas City.

OPERATING

C. P. Cahill, acting general manager of the Eastern district of the Union Pacific, with headquarters at Omaha, Neb., has been promoted to general manager.

T. R. Beach, trainmaster of the Paducah and East Cairo districts of the Illinois Central, with headquarters at Paducah, Ky., has been transferred to the Peoria district with jurisdiction over the Decatur Yard, with headquarters at Decatur, Ill., and has been succeeded by **H. D. Walker.**

G. H. Minchin, superintendent of the Illinois and Missouri divisions of the Atchison, Topeka & Santa Fe, with headquarters at Chillicothe, Ill., has been promoted to assistant general manager of the Southern district, with headquarters at Amarillo, Tex., to succeed F. L. Myers, retired, and has been relieved by **C. W. Philhour,** superintendent of the Chicago Terminal division, with headquarters at Chicago, who in turn, has been replaced by **J. B. Noe,** night trainmaster of the Kansas City division, with headquarters at Argentine, Kan., who has been succeeded by **V. E. Lovett.**

Edgar A. Robertson, assistant superintendent of the Moncton division of the Canadian National, with headquarters at Moncton, N. B., has been appointed superintendent of that division, succeeding **Hedley V. Musgrave,** who has retired on pension after more than 47 years of service. **Robert B. Graham,** assistant superintendent of the Edmundston division, with headquarters at Fredericton, N. B., has been transferred in the same capacity to the Moncton division, succeeding Mr. Robertson. **Jasper E. Dickison,** train conductor, has been appointed assistant superintendent of the Edmundston division at Fredericton, succeeding Mr. Graham.

Mr. Robertson was born at Montreal, Que., and entered the employ of the Canadian National on August 13, 1906, as clerk in the engineering department at Moncton. In August, 1912, he was appointed train agent and the following year returned to the engineering department. Mr. Robertson then served in the general superintendent's office from January, 1914, to September, 1916, when he was appointed chief clerk to the superintendent. He was appointed assistant superintendent of the Moncton division on January 21, 1929, the position he held until his recent appointment.

Mr. Musgrave was born at North Sydney, N. S., and entered the service of the Canadian National as operator at New Glasgow, N. S., on November 24, 1891. In April, 1897, he was appointed train dispatcher and in November, 1904, was transferred to Sydney. In February, 1919, Mr. Musgrave was promoted to assistant superintendent at Campbellton, N. B., and in April, 1923, was transferred to Halifax, N. S. On January 1, 1937, he was appointed superintendent of the Moncton division, with headquarters at Moncton, the position he held until his retirement.

Clark Hungerford, who has been promoted to general manager, Western Lines, of the Southern, with headquarters at Cincinnati, Ohio, as noted in the *Railway Age* of July 22, was born on December 22, 1899, at Jackson, Tenn., and graduated from Princeton University in 1922. He entered the service of the Southern on

Clark Hungerford

October 28, 1918, serving as transitman, junior engineer and coal chute foreman during summers while attending school. On December 1, 1922, he was appointed bridge inspector at Charlotte, N. C., which position he held until April 16, 1924, when he became an engineer and draftsman in the office of the chief engineer maintenance of way and structures. On July 1 of that year he was promoted to assistant engineer, with headquarters at Knoxville, Tenn., and on March 16, 1925 was appointed assistant trainmaster on the Asheville division, with headquarters at Asheville, N. C. A year later he was appointed trainmaster of the Atlanta division, with headquarters at Macon, Ga., and on July 1, 1927 was transferred to the Charlotte division, with headquarters at Charlotte, N. C. On October 1, 1927, he was promoted to superintendent of the Mobile division, which position he held until February 7, 1929, when he was transferred to the George, Southern & Florida at Macon. On February 10, 1934, he was transferred to the Washington division, with headquarters at Alexandria, Va., and on February 1, 1936, to the Birmingham division and the Northern Alabama.

ENGINEERING AND SIGNALING

S. H. Poore, chief draftsman in the office of engineer maintenance of way of the Chesapeake & Ohio, has been appointed assistant division engineer of the Richmond division, at Richmond, Va., succeeding **H. S. Talman,** transferred.

MECHANICAL

C. E. Bloom, general foreman on the Chicago, Burlington & Quincy at Lincoln, Neb., has been promoted to master mechanic at Casper, Wyo., succeeding **E. A. Schrank,** whose death on June 22 was announced in the *Railway Age* of July 1.

P. J. Danneberg, master mechanic of the Pecos division of the Atchison, Topeka & Santa Fe, with headquarters at Clovis, N. M., has been transferred to Winslow, Ariz. to succeed **W. D. Hitchcock,** retired, and has been replaced by **H. D. Eddy,** division foreman, Bakersfield, Cal.

OBITUARY

Austin F. Helm, assistant superintendent of the Decatur division of the Wabash, with headquarters at Decatur, Ill., died on July 26 after collapsing while driving his automobile. He was superintendent of the Detroit, Mich. division for 20 years, before being appointed superintendent at Decatur in 1930. He resigned in 1932 because of ill health, and was then named assistant superintendent.

Henry William MacKenzie, who retired May 31 as special assistant to general auditor of the Seaboard Air Line, with headquarters at Portsmouth, Va., died at the age of 62 in that city on July 27, following a short illness. Mr. MacKenzie entered railway service with the Florida Central & Peninsula May 1, 1891, and successively filled various positions in the accounting department with that company until 1900 when, by merger, it became a part of the present Seaboard Air Line. From that time until 1913 he filled the positions of assistant general bookkeeper, general bookkeeper, assistant to comptroller and in February, 1913 was appointed comptroller. During the period of Federal control, Mr. MacKenzie was federal auditor, Following the return of railroads to private ownership he occupied the position of general auditor until 1922 at which time he was made auditor of subsidiary lines. On account of his health, Mr. MacKenzie was assigned to less exacting duties as assistant to general auditor in May, 1930 and occupied such position until his retirement on May 31st.

Table of Revenues and Expenses of Railways begins on next left-hand page

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1939

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1939	Net railway operating income 1938
Akron, Canton & Youngstown	June	171	$148,489	$47	$154,923	$27,869	$12,777	$13,823	$50,644	$112,588	72.7	$42,335	$29,647	$14,357	—$5,036
	6 mos.	171	902,523	227	944,315	144,305	97,288	84,409	306,800	685,361	72.6	258,954	178,416	79,497	—46,667
Alton	June	959	1,005,143	217,810	1,412,570	207,340	176,666	50,282	534,281	1,040,690	73.7	371,880	279,052	95,549	—23,162
	6 mos.	959	5,210,369	1,214,328	7,530,707	1,075,658	1,071,540	275,953	3,193,586	6,036,566	80.2	1,494,141	921,001	—63,544	—392,842
Atchison, Topeka & Santa Fe System	June	13,447	11,988,351	1,782,889	14,903,710	2,425,840	453,641	5,048,123	11,272,949	75.6	3,630,761	2,384,252	2,336,611	3,331,422
	6 mos.	13,465	56,420,929	8,160,868	70,986,093	11,017,365	2,697,263	27,660,199	60,801,178	85.7	10,184,915	3,056,653	2,665,190	2,242,301
Atlanta & West Point	June	93	90,967	23,961	134,379	20,038	24,241	61,750	124,056	92.3	10,323	634	—12,484	—17,399
	6 mos.	93	578,001	136,725	848,884	103,926	155,031	383,514	751,931	88.6	96,953	38,928	—48,862	—124,629
Western of Alabama	June	133	85,665	23,319	126,003	22,054	27,861	8,116	52,780	119,505	94.8	6,498	—7,097	—4,198	—9,710
	6 mos.	133	573,200	134,328	823,380	114,957	172,426	48,668	329,452	718,685	87.3	104,695	23,308	31,916	—12,359
Atlanta, Birmingham & Coast	June	639	245,825	5,047	269,894	40,985	52,640	23,994	112,048	244,174	90.5	25,720	2,954	—21,616	—45,113
	6 mos.	639	1,522,982	150,309	1,801,849	260,261	302,991	144,755	716,406	1,530,775	85.0	271,074	132,996	—34,706	—197,452
Atlantic Coast Line	June	5,104	2,783,302	312,600	3,404,486	435,286	704,989	149,907	1,430,364	2,835,638	83.3	568,848	218,848	—60,345	—139,416
	6 mos.	5,107	19,018,904	4,363,206	26,119,358	2,551,983	4,392,340	956,970	9,886,309	18,892,282	72.3	7,227,076	4,277,076	2,711,882	2,030,044
Charleston & Western Carolina	June	343	205,723	1,598	211,406	24,122	31,914	9,115	68,649	139,681	66.1	71,725	49,725	47,079	18,838
	6 mos.	343	1,173,268	5,717	1,206,196	147,866	178,591	49,782	404,060	813,765	67.5	392,431	253,431	230,548	106,137
Baltimore & Ohio	June	6,398	10,856,394	1,101,342	12,770,868	1,352,216	2,626,631	401,498	4,608,281	9,592,869	75.1	3,177,999	2,302,981	1,863,883	1,381,337
	6 mos.	6,402	60,218,859	5,006,685	69,801,167	6,540,607	15,494,606	2,308,030	26,850,549	54,778,619	78.5	15,022,548	9,782,580	7,708,221	2,514,320
Staten Island Rapid Transit	June	24	53,438	70,450	133,944	10,356	21,563	948	75,712	121,236	90.5	12,708	—15,310	—20,155	—16,157
	6 mos.	24	311,832	432,543	800,164	66,563	125,339	6,465	487,330	758,741	94.8	41,423	—128,695	—168,699	—187,924
Bangor & Aroostook	June	603	299,410	13,968	334,308	93,764	83,553	5,468	100,241	307,955	92.1	26,353	—2,727	12,384	—43,507
	6 mos.	603	3,024,752	95,278	3,235,770	544,823	522,522	33,867	799,171	2,055,902	63.5	1,179,868	865,441	849,556	923,583
Bessemer & Lake Erie	June	224	1,483,332	720	1,496,807	166,787	285,390	11,751	201,769	697,233	46.6	799,574	747,495	735,851	164,829
	6 mos.	224	3,994,410	4,125	4,070,834	618,656	1,573,976	75,964	928,027	3,391,010	83.3	679,824	392,533	522,515	—270,706
Boston & Maine	June	1,937	2,561,951	600,339	3,685,710	481,781	532,242	68,019	1,431,059	2,662,279	72.2	1,023,431	717,663	509,456	310,649
	6 mos.	1,945	15,904,335	3,383,022	22,218,831	2,641,460	3,508,835	385,674	9,043,415	16,509,196	74.3	5,709,635	3,874,629	2,472,873	505,225
Burlington, Rock Island	June	255	73,398	19,832	100,513	18,031	22,049	4,701	44,342	98,796	98.3	1,717	—6,562	—11,514	20,524
	6 mos.	255	449,297	101,460	593,489	95,915	123,932	27,698	308,270	613,744	103.4	—20,255	—69,971	—103,779	—62,121
Cambria & Indiana	June	37	107,771	.....	107,861	7,445	38,545	384	10,809	62,245	57.71	45,616	15,358	84,627	40,038
	6 mos.	37	605,256	.....	605,813	38,900	239,869	2,485	64,304	380,688	62.83	225,125	67,582	402,766	340,234
Canadian Pacific Lines in Maine	June	234	96,705	14,292	125,176	68,493	27,666	10,429	53,866	166,169	132.8	—40,993	—51,392	—65,387	—96,743
	6 mos.	234	1,173,183	82,999	1,329,735	231,719	224,508	59,285	465,696	1,014,462	76.3	315,273	251,382	139,522	55,196
Canadian Pacific Lines in Vermont	June	91	57,910	8,043	77,706	20,038	24,973	3,762	57,983	109,916	141.4	—32,210	—39,152	—57,401	—60,330
	6 mos.	91	361,574	51,365	474,874	82,590	140,555	23,020	365,639	631,023	132.9	—156,149	—197,278	—308,678	—414,670
Central of Georgia	June	1,871	1,038,478	92,982	1,256,482	179,555	283,603	52,250	544,421	1,132,527	90.1	123,955	12,136	—28,116	—32,248
	6 mos.	1,871	6,151,146	586,884	7,671,298	1,012,362	1,650,792	313,668	3,331,280	6,759,863	88.1	911,435	238,998	122,938	—146,057
Central of New Jersey	June	710	1,983,160	378,502	2,562,481	210,768	533,220	50,175	2,359,073	5,769,092	55.3	4,655,655	3,462,357	3,346,861	1,984,842
	6 mos.	711	12,443,367	2,069,464	15,584,535	1,455,031	3,003,432	279,653	12,960,943	32,155,970	66.8	15,996,865	10,727,423	10,410,308	9,946,909
Central Vermont	June	430	381,301	40,255	462,978	89,575	84,781	12,773	475,018	976,993	86.0	158,979	81,979	—51,581	—43,905
	6 mos.	430	2,271,147	192,981	2,700,457	422,669	507,386	72,784	2,987,795	5,976,808	82.4	1,273,841	803,841	—19,269	—153,099
Chesapeake & Ohio	June	3,110	9,710,387	302,340	10,424,747	966,482	1,916,416	212,122	2,359,073	5,769,092	55.3	4,655,655	3,462,357	3,346,861	1,984,842
	6 mos.	3,110	44,888,038	1,482,215	48,152,834	5,172,436	10,995,136	1,234,300	12,960,943	32,155,970	66.8	15,996,865	10,727,423	10,410,308	9,946,909
Chicago & Eastern Illinois	June	927	857,700	126,176	1,135,972	156,191	229,656	53,771	475,018	976,993	86.0	158,979	81,979	—51,581	—43,905
	6 mos.	927	5,605,062	708,254	7,250,649	895,579	1,386,584	325,229	2,987,795	5,976,808	82.4	1,273,841	803,841	—19,269	—153,099
Chicago & Illinois Midland	June	131	244,423	543	262,462	39,546	69,006	18,624	57,834	203,668	77.6	58,794	34,557	52,186	45,786
	6 mos.	131	1,623,490	4,274	1,721,077	196,124	400,340	117,184	436,319	1,260,608	73.2	460,469	305,626	353,136	291,185
Chicago & North Western	June	8,329	5,308,798	1,254,652	7,323,815	1,461,952	1,529,454	227,068	2,764,501	6,301,552	86.0	1,022,263	495,402	297,197	102,853
	6 mos.	8,370	28,715,359	5,363,184	38,335,760	6,543,014	8,905,716	1,213,484	16,614,585	35,114,308	91.6	3,221,452	—274,412	—1,635,030	—3,463,680
Chicago, Burlington & Quincy	June	8,931	5,506,105	833,569	7,166,607	1,448,318	1,407,033	258,658	2,683,224	6,077,497	84.8	1,089,110	357,361	—15,813	142,850
	6 mos.	8,935	34,297,358	4,010,086	42,999,897	6,195,019	8,457,893	1,491,553	16,399,416	34,245,609	79.6	8,754,288	4,396,475	2,303,582	1,162,265
Chicago Great Western	June	1,505	1,273,213	41,767	1,415,745	210,720	220,096	57,326	519,364	1,058,893	74.8	356,852	263,795	81,105	—67,815
	6 mos.	1,505	7,670,023	230,907	8,493,162	1,155,278	1,404,417	353,496	3,289,711	6,514,840	76.7	1,978,322	1,419,730	324,155	—446,856
Chicago, Indianapolis & Louisville	June	549	591,364	46,624	719,653	97,853	165,330	28,755	297,732	626,477	87.1	93,176	59,319	—29,217	—67,084
	6 mos.	549	3,617,248	269,475	4,295,954	491,665	1,069,421	183,999	1,836,022	3,798,007	88.4	497,947	267,035	—320,115	—489,568

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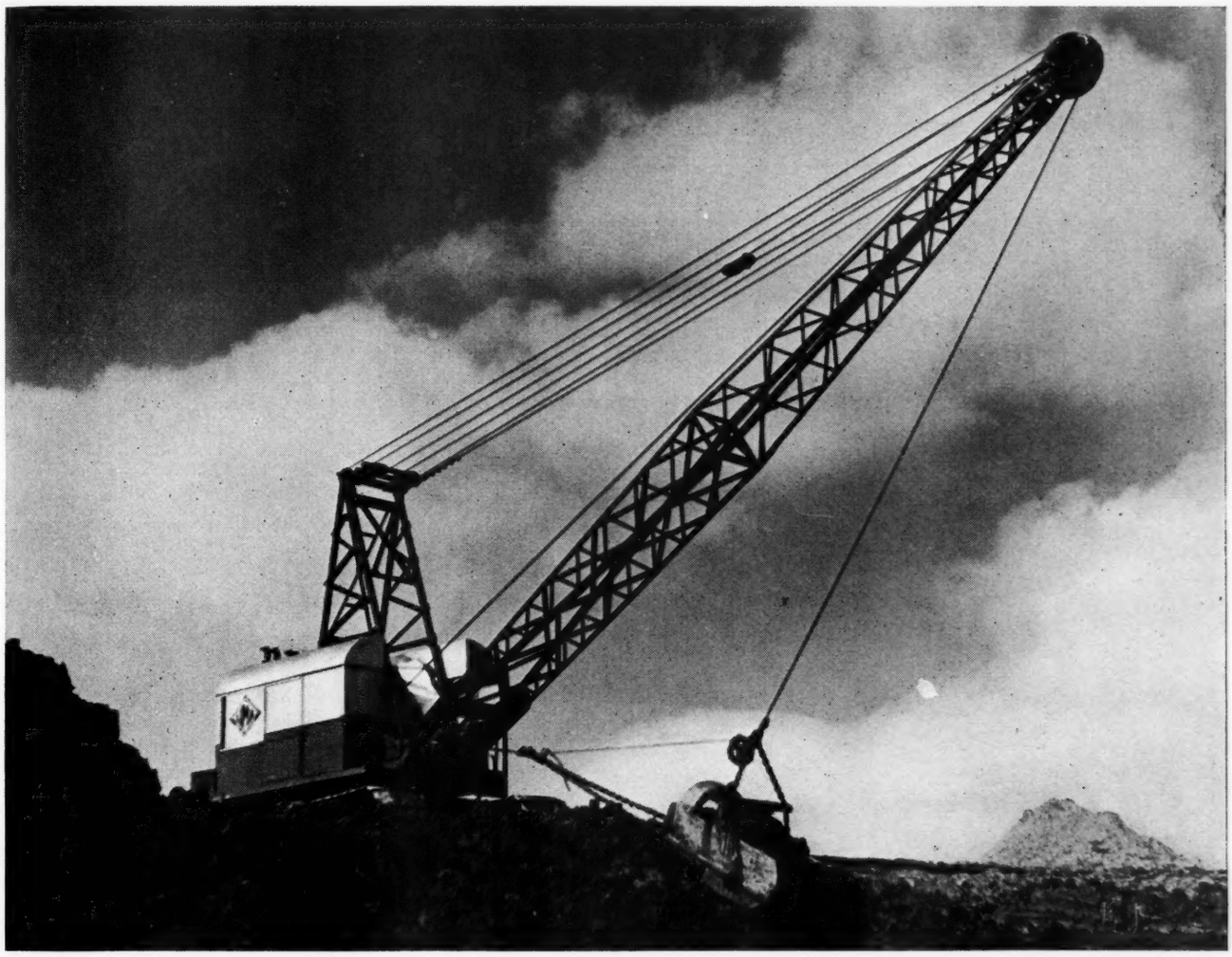

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REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1939—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1939	Net railway operating income 1938
Chicago, Milwaukee, St. Paul & Pacific	June	10,942	$6,728,477	$774,548	$8,384,573	$2,257,411	$1,701,955	$239,289	$3,222,483	$7,778,805	92.8	$605,768	$94,232	$490,337	$286,912
	6 mos.	10,942	39,744,099	3,591,878	47,998,992	8,496,938	9,871,891	1,363,612	19,492,478	41,369,640	86.2	6,629,352	2,387,352	108,820	—342,090
Chicago, Rock Island & Pacific	June	7,235	5,331,787	648,766	6,457,364	1,365,455	1,181,524	234,930	2,347,678	5,378,400	83.3	1,078,964	616,181	337,696	87,891
	6 mos.	7,253	28,176,805	3,507,945	34,495,992	4,973,872	7,099,007	1,395,300	14,040,785	29,132,706	84.5	5,363,286	2,553,860	912,008	—1,220,120
Chicago, Rock Island & Gulf	June	627	423,025	24,983	537,745	56,252	33,894	20,532	148,548	282,618	52.6	255,127	229,582	145,565	—10,949
	6 mos.	627	1,708,412	154,884	2,377,561	484,131	210,611	125,592	810,770	1,779,889	74.9	597,672	449,400	—49,154	—71,370
Chicago, St. Paul, Minneapolis & Omaha	June	1,629	1,198,349	144,517	1,446,521	442,996	241,604	40,067	635,076	1,425,533	98.6	20,988	—91,373	—190,022	—103,955
	6 mos.	1,629	6,591,171	649,157	7,777,696	1,192,973	1,538,586	232,056	3,900,917	7,253,183	93.3	524,513	—139,426	—735,238	—455,003
Clinchfield Railroad	June	308	532,810	3,264	542,193	47,639	101,350	19,920	105,381	294,224	54.3	247,969	197,925	211,944	110,782
	6 mos.	308	3,249,074	17,432	3,300,198	241,529	599,273	115,280	647,347	1,703,219	51.6	1,596,979	1,296,813	1,385,066	882,803
Colorado & Southern	June	787	454,998	24,926	530,864	71,580	96,494	15,375	196,406	407,095	76.7	123,769	48,914	34,671	24,717
	6 mos.	793	2,458,790	153,739	2,920,288	305,652	630,612	86,851	1,184,661	2,364,414	81.0	555,874	95,628	15,594	—170,343
Fort Worth & Denver City	June	902	491,290	47,256	531,412	60,393	81,835	18,452	179,878	374,139	70.4	157,273	120,132	80,500	169,494
	6 mos.	902	2,516,874	262,911	2,748,124	340,324	510,227	110,603	1,042,580	2,203,787	80.2	544,337	322,652	98,803	302,220
Columbus & Greenville	June	168	104,758	6,060	117,335	21,914	18,357	4,841	36,107	92,313	78.7	25,022	15,224	16,250	—266
	6 mos.	168	613,089	37,939	688,917	102,381	105,948	28,045	222,996	524,209	76.1	164,708	109,501	101,390	26,642
Delaware & Hudson	June	831	1,668,916	74,134	1,837,449	248,724	348,074	48,025	650,609	1,367,016	74.4	470,433	323,559	302,190	272,371
	6 mos.	831	10,840,160	496,723	11,827,144	1,204,017	2,054,253	259,488	4,367,542	8,402,795	71.0	3,424,349	2,459,459	2,338,374	1,100,378
Delaware, Lackawanna & Western	June	985	2,820,038	586,772	3,876,612	334,396	772,413	115,073	1,745,390	3,098,838	79.9	777,774	344,774	266,368	216,033
	6 mos.	986	18,476,398	3,255,377	24,333,519	1,463,621	4,635,230	684,188	11,252,743	18,893,929	77.6	5,439,590	2,830,590	2,406,673	1,103,676
Denver & Rio Grande Western	June	2,555	1,545,287	175,722	1,846,542	424,484	464,692	80,819	674,930	1,701,524	92.1	145,018	—5,465	—85,508	—272,551
	6 mos.	2,559	9,378,843	626,598	10,612,088	1,940,350	2,842,431	413,499	3,964,715	9,596,286	90.4	1,015,802	—113,951	—483,095	—1,119,545
Denver & Salt Lake	June	232	78,250	5,574	93,254	43,762	37,970	2,536	40,389	134,008	143.7	—40,754	—63,853	—14,496	49,619
	6 mos.	232	855,370	34,175	942,149	190,482	271,190	15,135	324,797	859,791	91.3	82,358	—89,264	180,566	228,759
Detroit & Mackinac	June	242	61,450	2,557	72,833	16,918	15,121	906	23,580	59,584	81.8	13,249	9,613	5,977	6,658
	6 mos.	242	295,445	15,552	361,759	61,162	77,502	5,685	142,748	305,890	84.6	55,869	32,182	8,800	9,574
Detroit & Toledo Shore Line	June	50	189,836	.....	190,915	23,164	21,328	8,714	60,955	121,731	63.8	69,184	45,281	8,411	—5,268
	6 mos.	50	1,528,089	.....	1,535,176	156,801	129,448	53,750	504,361	891,072	58.0	644,104	470,593	190,632	114,242
Detroit, Toledo & Ironton	June	472	417,086	222	435,392	49,793	82,272	12,335	119,642	282,967	65.0	152,425	104,298	95,687	37,408
	6 mos.	472	3,060,122	1,096	3,203,026	328,367	516,498	74,185	777,770	1,811,853	56.6	1,391,173	1,034,469	928,894	468,724
Duluth, Missabe & Iron Range	June	540	2,272,873	1,578	2,637,778	274,680	186,445	3,981	372,306	870,527	33.0	1,767,251	1,500,048	1,499,037	893,003
	6 mos.	540	4,226,195	8,849	4,923,681	979,864	1,326,324	25,712	1,291,469	3,828,705	77.8	1,094,976	69,601	72,084	—817,078
Duluth, Winnipeg & Pacific	June	175	80,434	811	84,093	23,546	17,527	2,329	42,495	90,848	108.0	—6,755	—14,495	—25,161	—37,232
	6 mos.	175	592,107	6,958	614,657	128,454	112,699	13,519	282,053	562,284	91.5	52,373	2,186	—81,707	—159,257
Elgin, Joliet & Eastern	June	390	1,012,030	.....	1,221,516	167,329	285,556	14,398	482,211	988,934	81.0	232,582	124,080	95,691	—9,202
	6 mos.	390	6,866,466	8	7,872,867	860,549	1,690,667	89,488	3,039,338	5,908,654	75.1	1,964,213	1,229,409	958,713	—114,363
Erie	June	2,290	5,378,530	438,120	6,408,250	682,512	1,243,835	173,301	2,412,964	4,766,430	74.4	1,641,820	1,065,667	817,275	—8,577
	6 mos.	2,290	32,026,161	2,282,770	37,106,404	3,324,500	7,640,909	1,029,710	14,602,495	28,107,851	75.7	8,998,553	5,578,190	4,199,692	—279,205
New York, Susquehanna & Western	June	145	213,221	18,824	240,968	22,627	29,269	3,146	92,700	160,784	66.7	80,184	46,297	9,249	—5,292
	6 mos.	145	1,388,121	111,325	1,566,950	112,628	161,875	19,458	613,192	988,415	63.1	578,535	374,722	154,043	69,580
Florida East Coast	June	685	275,495	83,272	411,892	113,194	144,276	21,971	172,467	493,695	119.9	—81,803	—139,483	—196,898	—236,701
	6 mos.	685	3,423,161	1,777,507	5,799,256	611,649	873,095	147,452	1,816,673	3,814,766	65.8	1,984,490	1,514,058	1,088,004	1,519,833
Georgia Railroad	June	329	254,619	10,619	289,259	31,744	52,268	18,476	128,996	245,310	84.8	43,949	28,098	44,218	31,220
	6 mos.	329	1,530,770	62,573	1,744,809	199,094	311,367	111,178	769,823	1,476,482	84.6	268,327	174,073	250,225	161,465
Georgia & Florida	June	408	82,843	2,211	89,067	19,248	16,520	7,649	35,469	84,173	94.5	4,894	—3,145	—7,487	—8,148
	6 mos.	408	470,166	9,296	503,583	112,815	99,217	49,260	212,261	504,601	100.2	—1,018	—49,053	—72,492	—71,405
Grand Trunk Western	June	1,029	1,477,075	100,253	1,677,231	223,653	349,051	43,711	703,586	1,398,590	83.4	278,641	157,063	97,802	—91,332
	6 mos.	1,030	9,228,937	455,214	10,396,734	1,294,576	2,256,502	251,100	4,485,672	8,741,097	84.1	1,655,637	910,992	483,458	—1,169,922
Canadian National Lines in New England	June	172	90,950	6,206	106,225	35,526	15,635	3,001	54,168	112,975	106.3	—6,750	—22,915	—48,730	—43,660
	6 mos.	172	554,422	23,888	640,351	181,762	107,084	17,167	396,028	731,390	114.2	—91,039	—188,025	—353,734	—345,674
Great Northern	June	8,072	7,078,574	531,558	8,330,992	1,267,829	1,261,546	198,171	2,306,862	5,297,764	63.6	3,033,228	2,261,910	2,158,394	1,176,719
	6 mos.	8,072	31,852,696	2,058,219	36,969,356	4,776,428	7,584,302	1,175,147	13,170,527	28,240,901	76.4	8,728,455	4,493,188	3,735,485	308,932
Green Bay & Western	June	234	125,900	402	131,132	24,734	15,891	6,390	44,039	95,315	72.6	35,817	21,859	11,592	15,214
	6 mos.	234	787,890	1,982	816,544	137,020	93,321	39,359	276,569	573,882	70.2	242,662	163,612	112,297	57,277

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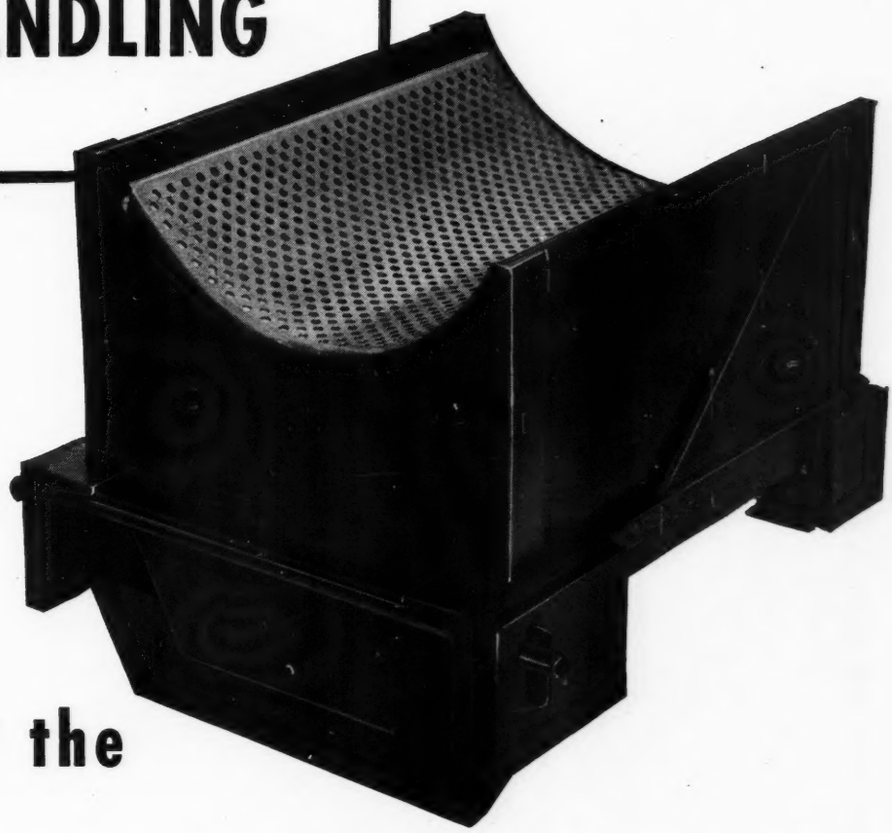
FOR EASE OF MAINTENANCE AND HANDLING



Specify the No. 8 Combined Lubricator and Spreader

The New reversible cellar of the Franklin No. 8 Combined Lubricator and Spreader weighs less than half of the old cast steel cellar; yet its design assures an even better lubricating job. This fabricated steel unit, in which the hub end wall is integral with the spreader, makes possible a light, open-end cellar which brings the perforated plate closer to the hub. » » » Despite the drastic reduction in weight, the fabricated steel construction effectively eliminates the possibility of the jaws of the driving box closing in and pinching the cellar. For new power or replacements, specify the Franklin No. 8 Combined Lubricator and Spreader and secure better lubrication with a minimum of weight.

FRANKLIN RAILWAY SUPPLY COMPANY, INC. NEW YORK CHICAGO MONTREAL

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1939—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1939	Net railway operating income 1938
Gulf & Ship Island	June	259	$78,684	$3,526	$91,802	$23,736	$15,505	$2,961	$44,591	$91,836	100.0	—$34	—$16,915	—$21,483	—$35,674
	6 mos.	259	521,502	21,385	600,809	126,384	104,418	15,095	283,489	555,986	92.5	44,823	—56,329	—104,737	—122,615
Gulf, Mobile & Northern	June	824	496,891	19,393	542,052	77,988	86,469	40,128	146,256	390,446	72.0	151,606	102,106	70,406	46,366
	6 mos.	824	3,010,756	107,810	3,258,808	421,377	495,683	238,039	890,815	2,250,245	69.1	1,008,563	724,063	503,980	301,079
Illinois Central	June	4,949	5,881,936	702,642	7,249,945	840,549	1,674,338	198,106	2,802,048	5,834,972	80.5	1,414,973	734,590	677,261	740,362
	6 mos.	4,949	37,071,008	4,382,358	45,472,157	4,711,969	9,914,162	1,124,113	17,855,400	35,535,800	78.1	9,936,357	5,742,444	5,267,781	4,965,381
Yazoo & Mississippi Valley	June	1,619	907,771	58,094	1,036,868	129,939	176,372	31,373	444,149	825,265	79.6	211,603	73,249	—8,974	78,495
	6 mos.	1,619	5,831,667	322,218	6,621,353	707,532	1,021,185	177,269	2,735,692	4,905,875	74.1	1,715,478	887,155	506,113	580,940
Illinois Central System	June	6,568	6,789,707	760,736	8,286,813	970,488	1,850,710	229,479	3,246,197	6,660,237	80.4	1,626,576	805,783	676,199	827,857
	6 mos.	6,568	42,902,675	4,704,576	52,093,510	5,419,501	10,935,347	1,301,382	20,591,092	40,441,675	77.6	11,651,835	6,617,271	5,828,871	5,601,921
Illinois Terminal	June	481	345,429	55,851	445,552	51,052	71,659	16,716	154,434	312,957	70.24	132,595	87,696	69,501	40,647
	6 mos.	489	2,108,482	348,385	2,696,798	294,443	426,340	98,018	975,145	1,903,248	70.57	793,550	537,514	438,255	276,514
Kansas City Southern	June	879	898,267	26,430	1,051,886	93,470	159,394	52,390	319,523	682,085	64.9	369,801	270,801	222,012	254,693
	6 mos.	879	5,480,836	107,699	6,281,830	551,764	931,123	314,150	1,867,981	4,006,997	63.8	2,274,833	1,680,833	1,415,853	1,460,150
Kansas, Oklahoma & Gulf	June	327	232,204	373	235,228	36,439	14,183	8,684	40,082	108,859	46.3	126,369	101,680	84,342	52,819
	6 mos.	327	1,316,081	2,117	1,334,319	183,370	104,467	53,515	252,533	649,514	48.7	684,805	558,432	449,833	318,500
Lake Superior & Ishpeming	June	156	248,351	56	306,782	34,016	20,646	553	44,591	105,460	34.4	201,322	170,558	169,672	8,885
	6 mos.	156	582,049	367	697,828	139,044	116,433	3,812	172,460	468,079	67.1	229,749	20,198	15,348	—309,130
Lehigh & Hudson River	June	96	119,865	61	120,476	17,289	22,008	3,435	42,324	91,495	75.9	28,981	15,762	4,597	11,549
	6 mos.	96	761,390	400	765,696	68,045	127,283	21,653	265,928	522,176	68.2	243,520	153,742	87,409	32,715
Lehigh & New England	June	200	341,994	.....	344,660	35,841	65,784	6,753	108,699	232,857	67.6	111,803	82,726	87,258	114,276
	6 mos.	200	2,000,733	.....	2,015,064	184,318	355,086	40,552	634,935	1,311,120	65.1	703,944	520,708	561,152	321,175
Lehigh Valley	June	1,282	2,831,153	208,797	3,261,720	298,449	658,964	109,337	1,468,597	2,653,897	81.4	607,823	348,015	134,461	378,434
	6 mos.	1,283	19,650,492	1,012,113	22,002,992	1,335,444	3,968,981	660,225	9,431,225	16,131,582	73.3	5,871,410	4,275,435	3,093,805	1,340,208
Louisiana & Arkansas	June	606	439,095	8,960	465,834	65,730	71,555	30,822	126,125	311,126	66.8	154,708	112,072	102,923	108,708
	6 mos.	606	2,721,645	45,960	2,888,544	390,321	433,830	187,311	779,429	1,913,209	66.2	975,335	720,371	586,915	556,483
Louisiana, Arkansas & Texas	June	240	91,286	Dr. 1	94,795	24,447	10,175	4,958	32,851	92,820	97.9	1,975	—2,559	—14,306	5,096
	6 mos.	240	535,450	2	553,652	133,269	64,838	28,745	193,166	463,273	83.7	90,379	63,100	—9,858	—50,177
Louisville & Nashville	June	4,908	6,068,593	506,896	7,040,664	775,935	1,478,703	180,341	2,391,834	5,089,276	72.3	1,951,388	1,378,712	1,355,964	667,317
	6 mos.	4,914	34,386,183	2,928,619	40,384,613	4,527,375	9,153,305	1,100,487	14,410,836	30,797,309	76.3	9,587,304	5,932,582	5,769,831	3,232,195
Maine Central	June	990	753,220	100,480	951,963	156,105	130,337	12,407	348,015	679,282	71.3	272,681	206,768	184,157	94,392
	6 mos.	997	5,090,197	439,027	6,068,668	926,463	1,004,356	74,377	2,205,411	4,412,140	72.7	1,656,528	1,255,556	959,882	586,360
Midland Valley	June	352	106,077	4	107,568	14,272	13,375	2,618	27,470	62,813	58.4	44,755	32,213	26,237	23,261
	6 mos.	352	617,059	12	626,002	73,447	55,539	15,727	172,634	354,242	56.6	271,760	201,097	161,936	107,787
Minneapolis & St. Louis	June	1,519	648,279	8,841	696,320	118,245	124,217	45,711	254,907	584,201	83.9	112,119	65,328	18,551	24,563
	6 mos.	1,523	3,817,323	48,464	4,077,789	590,327	733,293	279,265	1,586,786	3,401,704	83.4	676,085	411,258	176,771	107,221
Minneapolis, St. Paul & Sault Ste. Marie	June	4,289	2,042,678	126,393	2,357,673	411,457	364,327	65,193	906,047	1,839,294	78.0	518,379	352,820	243,803	22,806
	6 mos.	4,290	10,351,940	464,570	11,766,868	2,012,909	2,304,441	378,215	5,379,380	10,588,563	90.0	1,178,305	165,072	—419,863	—1,154,687
Duluth, South Shore & Atlantic	June	550	176,819	10,010	210,567	33,918	33,590	5,249	81,479	160,587	76.3	49,980	35,624	28,800	—19,404
	6 mos.	550	788,843	55,975	940,538	195,271	214,328	32,202	474,047	953,853	101.4	—13,315	—98,984	—128,777	—152,051
Spokane International	June	152	58,169	892	64,901	21,456	6,556	1,984	21,575	56,640	87.3	8,261	3,001	565	5,694
	6 mos.	152	319,338	5,214	363,075	90,097	40,582	12,164	133,335	305,224	84.1	57,851	37,029	22,010	—14,769
Mississippi Central	June	150	64,154	1,736	68,233	26,365	10,045	6,953	17,844	66,059	96.8	2,174	—2,665	—8,263	3,704
	6 mos.	150	370,665	9,102	393,381	126,299	58,581	42,281	115,813	372,980	94.8	20,401	—8,347	—38,264	—12,779
Missouri & Arkansas	June	365	79,168	1,269	85,533	21,404	9,222	7,044	26,463	69,242	81.0	16,291	12,481	4,224	—14,298
	6 mos.	365	464,605	8,576	512,872	124,816	57,016	38,020	167,799	418,759	81.6	94,113	71,069	25,878	—36,887
Missouri-Illinois	June	193	183,303	375	185,929	28,172	16,784	3,137	46,913	97,979	52.7	87,950	65,477	47,809	—9,953
	6 mos.	193	992,580	2,186	1,005,376	139,375	92,963	18,278	282,635	561,306	55.8	444,070	359,554	252,701	—5,899
Missouri-Kansas-Texas Lines	June	3,294	1,960,393	201,453	2,379,815	341,319	403,997	111,075	877,668	1,861,227	78.2	518,588	305,848	125,868	40,472
	6 mos.	3,294	10,947,115	1,014,891	13,321,448	1,949,792	2,377,614	665,487	5,251,598	11,025,666	82.8	2,295,782	1,260,371	175,037	—323,943
Missouri Pacific	June	7,150	5,447,937	406,791	6,453,340	1,100,527	1,283,100	236,855	2,427,734	5,289,995	82.0	1,163,345	671,734	294,991	1,060
	6 mos.	7,169	32,288,849	2,319,659	38,125,587	5,650,169	7,957,787	1,408,782	14,729,387	31,261,478	82.0	6,864,109	3,942,546	1,672,286	588,432
Gulf Coast Lines	June	1,759	806,642	37,557	904,601	191,644	200,565	46,340	320,732	813,681	89.95	90,920	19,292	—33,963	—80,060
	6 mos.	1,759	7,822,987	220,166	8,439,555	1,189,653	1,199,339	271,149	2,374,391	5,334,631	63.21	3,104,924	2,669,385	1,904,125	1,682,396

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WOULD YOU SPEND...

1 dollar

TO SAVE..

10 dollars

You accept locomotive arches as a matter of course; as a fundamental in locomotive design. But the Arch can only give you the full economy when each course and each arch brick is in place. Paring down the arch in an effort to save $1.00 costs you $10.00 for the extra fuel wasted by the shortened arch.

These proportions have been established by repeated tests on various types of motive power. So against any "saving" in arch brick expense by cutting down the arch, mark up $10.00 on the loss side of the ledger.

There's More to SECURITY ARCHES Than Just Brick

HARBISON-WALKER REFRACTORIES CO.

Refractory Specialists

AMERICAN ARCH CO.
INCORPORATED
60 EAST 42nd STREET, NEW YORK, N. Y.
Locomotive Combustion Specialists

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1939—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1939	Net railway operating income 1938
International Great Northern	June	1,155	$736,624	$77,999	$916,168	$151,506	$173,178	$30,395	$378,790	$788,879	86.1	$127,289	$69,856	$16,155	—$54,018
	6 mos.	1,155	4,567,354	403,912	5,582,148	909,470	1,138,395	182,781	2,441,157	4,989,557	89.4	592,591	239,856	—287,632	—345,285
Mobile & Ohio	June	1,180	831,037	25,574	892,731	152,028	182,369	43,782	327,417	749,902	84.0	142,829	80,395	18,225	44,705
	6 mos.	1,180	5,293,943	138,619	5,708,384	887,669	1,110,348	259,949	2,065,223	4,592,839	80.5	1,115,545	738,091	299,203	330,517
Monongahela	June	172	347,833	552	350,230	33,640	26,848	424	69,063	132,272	37.8	217,958	193,289	122,894	91,108
	6 mos.	172	1,591,212	3,468	1,605,419	174,372	141,997	2,917	386,850	722,807	45.0	882,612	726,617	371,211	308,232
Montour	June	56	212,602	.....	213,242	18,953	42,256	951	39,469	107,702	50.5	105,540	75,447	83,962	51,126
	6 mos.	56	718,448	.....	726,385	58,632	221,062	5,942	186,533	511,730	70.4	214,655	110,757	250,642	213,313
Nashville, Chattanooga & St. Louis	June	1,111	919,388	80,094	1,118,569	146,959	256,349	63,513	447,551	969,471	86.7	149,098	71,320	60,079	65,979
	6 mos.	1,111	5,947,675	560,005	7,320,385	808,174	1,447,340	389,431	2,794,470	5,779,530	79.0	1,540,855	1,069,471	886,615	605,524
Nevada Northern	June	165	47,583	651	53,080	7,582	4,037	1,189	9,173	26,798	50.5	26,282	14,535	17,814	9,907
	6 mos.	165	289,470	5,175	322,728	44,666	23,128	7,402	61,443	166,796	51.7	155,932	89,636	104,877	59,355
New York Central	June	11,043	17,449,181	5,998,055	26,696,492	3,082,632	5,359,002	619,816	9,947,263	20,262,158	75.9	6,434,334	3,469,616	2,456,388	922,244
	6 mos.	11,043	108,147,433	29,383,319	155,970,720	16,703,943	33,407,852	3,391,601	61,635,180	122,549,527	78.6	33,421,193	15,677,989	8,689,953	108,187
Pittsburgh & Lake Erie	June	233	1,379,799	35,694	1,463,951	169,225	529,234	28,037	451,472	1,255,603	85.8	208,348	55,325	237,700	190,073
	6 mos.	233	6,837,476	234,615	7,347,361	841,598	2,861,299	165,776	2,718,440	7,064,845	96.2	282,516	—487,296	648,008	235,066
New York, Chicago & St. Louis	June	1,704	3,139,202	81,910	3,335,879	387,141	527,240	121,793	1,147,053	2,312,544	69.3	1,023,335	811,244	535,940	284,764
	6 mos.	1,704	18,433,722	395,047	19,469,490	2,101,241	3,023,998	725,604	7,192,433	13,759,873	70.7	5,709,617	4,480,551	2,833,857	1,176,049
New York, New Haven & Hartford	June	1,863	3,671,280	2,353,062	6,707,111	1,127,858	1,175,406	133,520	2,477,186	5,260,928	78.4	1,446,183	931,183	322,075	—103,481
	6 mos.	1,878	22,532,514	12,942,525	39,565,901	5,078,890	6,752,004	686,485	15,293,611	29,937,382	75.7	9,628,519	6,538,519	2,861,601	—659,996
New York Connecting	June	21	175,746	.....	188,833	38,159	9,914	.....	29,648	79,001	41.8	109,832	69,514	72,704	120,864
	6 mos.	21	1,228,743	.....	1,293,066	140,241	61,490	.....	192,075	401,782	31.1	891,284	644,587	653,477	362,300
New York, Ontario & Western	June	576	384,544	26,260	454,467	79,431	112,622	17,276	236,668	467,693	102.9	—13,226	—53,856	—91,404	6,461
	6 mos.	576	3,001,872	60,405	3,335,783	338,084	699,843	101,617	1,638,546	2,922,944	87.6	412,839	105,581	—136,627	—378,706
Norfolk & Western	June	2,191	7,238,820	164,472	7,609,534	740,361	1,553,463	144,906	1,645,091	4,276,888	56.2	3,332,646	2,285,748	2,334,635	1,165,667
	6 mos.	2,191	35,529,470	859,872	37,652,237	4,133,974	8,505,760	825,482	9,465,676	24,064,501	63.9	13,587,736	8,354,489	9,232,129	5,394,070
Norfolk Southern	June	805	553,767	3,386	574,085	75,017	52,440	24,575	167,592	326,899	56.9	247,186	213,699	184,783	215,999
	6 mos.	805	2,163,598	17,315	2,274,813	433,225	319,653	146,968	844,312	1,835,829	80.7	438,984	244,216	139,383	168,103
Northern Pacific	June	6,720	4,448,717	478,280	5,403,916	1,026,157	1,026,134	178,995	1,847,134	4,374,376	81.	1,029,540	464,125	665,585	285,292
	6 mos.	6,721	23,711,952	1,743,979	27,989,798	4,357,458	6,374,207	1,046,633	11,074,455	24,523,192	87.6	3,466,606	130,086	1,693,411	—154,833
Northwestern Pacific	June	352	205,182	55,958	290,522	62,193	48,748	4,381	156,988	283,330	97.5	7,192	—10,729	—20,212	—70,383
	6 mos.	352	1,030,457	303,897	1,489,362	340,410	288,942	20,806	894,977	1,613,871	108.4	—124,509	—230,523	—283,933	—728,929
Oklahoma City-Ada-Atoka	June	132	32,286	315	34,515	8,999	1,359	713	10,662	23,577	68.3	10,938	8,015	3, 80	—2,220
	6 mos.	132	180,400	1,708	193,487	39,541	8,029	4,672	63,197	126,059	65.2	67,428	50,330	29,8 '0	12,964
Pennsylvania	June	10,289	24,531,085	6,181,484	33,852,020	3,399,743	6,950,858	724,680	12,001,829	24,288,840	71.8	9,563,180	6,091,927	5,602,371	5,184,437
	6 mos.	10,289	138,240,797	33,921,966	189,623,404	19,970,457	38,191,655	4,109,948	71,331,404	140,863,031	74.3	48,760,373	29,738,751	26,546,569	19,678,844
Long Island	June	383	536,108	1,756,489	2,399,190	204,263	325,880	15,470	1,020,903	1,602,995	66.8	796,195	400,579	167,175	59,672
	6 mos.	383	3,385,203	8,007,122	11,949,864	1,301,469	2,116,332	58,177	5,919,217	9,606,293	80.4	2,343,571	730,508	—368,034	—328,715
Pennsylvania-Reading Seashore Lines	June	412	235,841	194,216	454,289	91,423	66,704	8,838	282,255	465,873	102.5	—11,584	—105,396	—194,458	—161,901
	6 mos.	412	1,450,305	728,037	2,291,882	466,030	466,318	41,134	1,668,961	7,738,348	119.5	—446,466	—930,646	—1,340,038	—1,326,456
Pere Marquette	June	2,115	2,021,244	87,580	2,261,163	333,774	508,560	64,888	870,390	1,874,610	82.9	386,553	232,316	116,332	—159,029
	6 mos.	2,115	12,571,754	426,371	13,723,490	1,861,733	3,050,205	378,387	5,476,295	11,342,777	82.7	2,380,713	1,449,076	820,767	—723,454
Pittsburg & Shawmut	June	101	42,376	.....	42,612	10,536	16,052	1,503	14,920	46,587	109.3	—3,975	—5,953	—5,722	—9,509
	6 mos.	101	252,872	.....	255,023	42,167	98,038	9,085	89,550	260,717	102.2	—5,694	—17,031	—22,165	—41,050
Pittsburgh & West Virginia	June	136	218,336	55	233,359	33,574	56,669	13,968	56,315	183,019	78.4	50,340	27,354	35,494	29,388
	6 mos.	136	1,329,409	139	1,426,644	188,942	314,905	86,875	349,047	1,081,288	75.8	345,356	208,198	242,081	230,101
Pittsburg, Shawmut & Northern	June	190	72,775	.....	73,203	17,388	12,409	954	22,836	58,954	80.5	14,249	9,451	1,348	—746
	6 mos.	190	429,100	.....	433,034	76,055	70,538	5,693	149,097	335,045	77.4	97,989	69,722	25,107	—12,389
Reading	June	1,450	3,765,229	246,302	4,210,132	352,403	719,521	71,989	1,752,769	3,047,317	72.4	1,162,815	882,585	853,782	840,817
	6 mos.	1,450	23,380,075	1,619,614	26,189,349	2,054,038	4,843,230	425,183	10,862,125	19,079,668	72.9	7,109,681	5,169,210	5,013,855	3,896,020
Richmond, Fredericksburg & Potomac	June	118	410,772	158,336	666,462	91,521	134,637	9,812	229,933	503,818	75.6	162,644	106,919	65,777	23,864
	6 mos.	118	2,457,549	1,412,438	4,571,720	441,129	839,527	57,234	1,721,327	3,353,445	73.4	1,218,275	859,001	466,443	209,845
Rutland	June	407	184,308	22,479	277,504	40,091	58,848	10,983	146,201	267,168	96.3	10,336	—8,252	—13,001	—42,171
	6 mos.	407	1,124,741	155,547	1,631,255	215,359	341,076	61,427	921,809	1,604,421	98.4	26,834	—89,289	—101,805	—371,173

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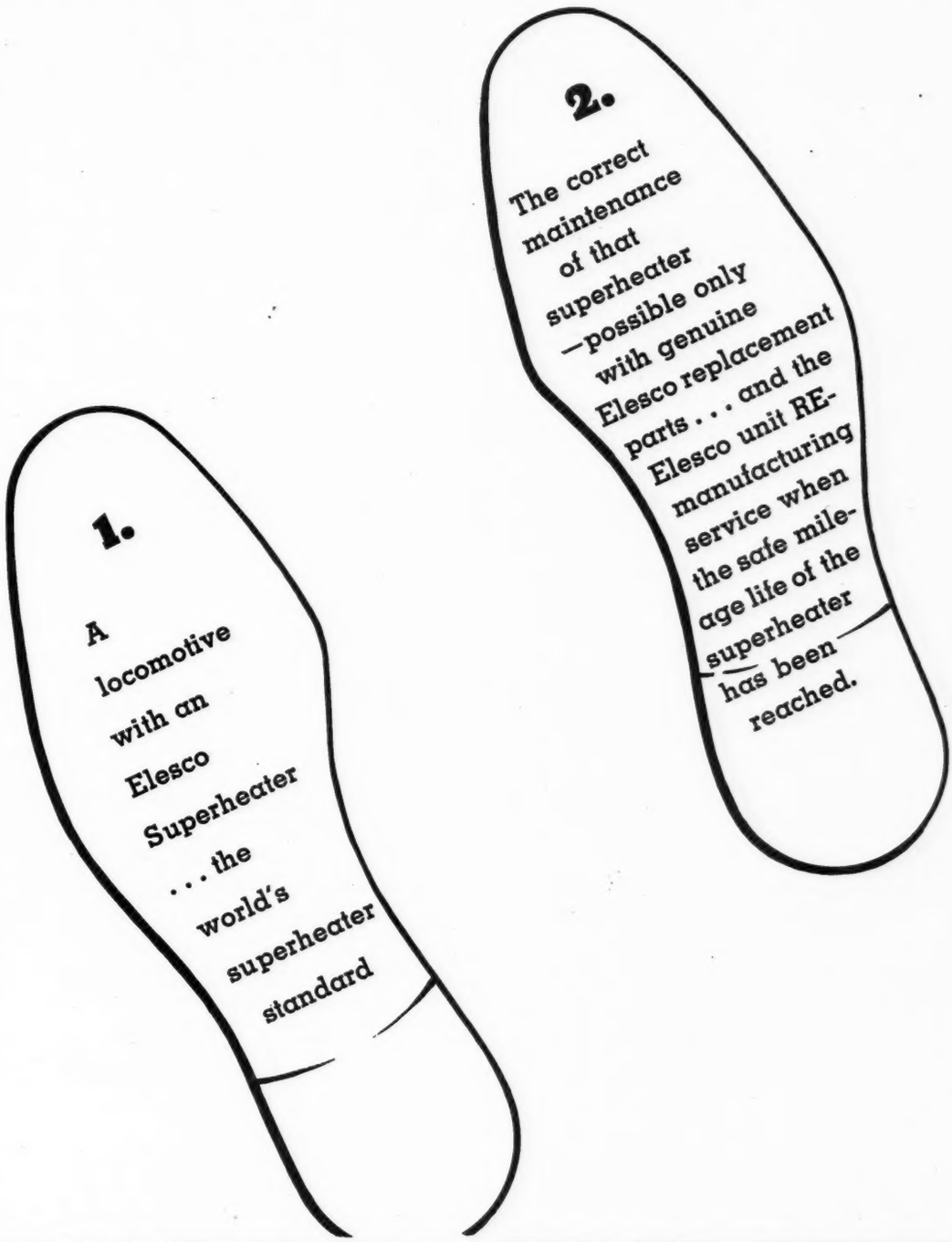
Steps That Lead to Successful Locomotive Performance



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THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, INC.

60 East 42nd Street, NEW YORK 122 S. Michigan Ave., CHICAGO

Canada: THE SUPERHEATER COMPANY, LTD., MONTREAL

Superheaters « Exhaust Steam Injectors « Feedwater Heaters « American Throttles « Pyrometers « Steam Dryers

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF JUNE AND SIX MONTHS OF CALENDAR YEAR 1939—CONTINUED

Name of road		Av. mileage operated during period	Operating revenues: Freight	Passenger	Total (inc. misc.)	Operating expenses: Maintenance of Way and structures	Maintenance of Equipment	Traffic	Transportation	Total	Operating ratio	Net from railway operation	Operating income	Net railway operating income 1939	Net railway operating income 1938
St. Louis-San Francisco	June	4,824	$3,470,157	$278,590	$4,063,350	$596,231	$932,387	$122,270	$1,437,658	$3,271,392	80.5	$791,958	$455,454	$429,112	$131,310
	6 mos.	4,840	17,799,269	1,531,073	21,231,584	3,398,981	5,237,591	710,489	8,362,765	18,792,957	88.5	2,438,627	513,112	449,850	—761,215
St. Louis, San Francisco & Texas	June	267	186,380	592	193,342	25,144	16,620	8,437	54,599	111,339	57.6	82,003	73,360	46,065	50,220
	6 mos.	267	735,149	3,064	774,901	144,578	87,633	48,810	318,263	638,736	82.4	136,165	85,186	—76,806	—93,425
St. Louis Southwestern Lines	June	1,690	1,447,586	29,067	1,548,871	456,054	280,935	81,420	519,811	1,413,019	91.2	135,852	22,696	—122,666	173,894
	6 mos.	1,697	8,794,769	138,622	9,316,656	1,638,461	1,746,118	498,531	3,111,422	7,453,196	80.0	1,863,460	1,204,733	363,768	625,540
Seaboard Air Line	June	4,317	2,486,528	385,412	3,162,044	574,862	715,691	160,140	1,231,632	2,856,722	90.3	305,322	80,322	26,867	—123,451
	6 mos.	4,317	17,025,801	3,647,746	22,834,000	3,248,250	4,459,165	1,027,908	8,450,493	18,432,315	80.7	4,401,685	2,511,685	1,672,628	1,055,750
Southern Railway	June	6,574	6,331,863	800,078	7,802,150	1,007,011	1,330,991	161,431	2,651,611	5,475,329	70.2	2,326,821	1,682,508	1,493,654	607,348
	6 mos.	6,584	37,857,741	4,084,893	46,031,869	5,855,794	7,982,492	929,821	16,408,948	33,070,565	71.8	12,961,304	9,102,120	7,644,600	3,569,588
Alabama Great Southern	June	315	512,799	56,593	610,404	94,074	122,559	13,568	166,292	419,690	68.8	190,714	121,752	128,606	90,455
	6 mos.	315	3,105,315	255,500	3,610,423	511,672	731,516	75,854	1,092,777	2,548,549	70.6	1,061,874	668,197	740,591	434,046
Cincinnati, New Orleans & Texas Pacific	June	337	1,253,917	75,684	1,413,464	174,720	278,736	30,658	349,815	883,731	62.5	529,733	375,708	368,481	271,598
	6 mos.	337	7,555,308	569,603	8,641,826	1,087,230	1,625,767	172,245	2,234,716	5,434,254	62.9	3,207,572	2,340,724	2,316,694	1,556,702
Georgia Southern & Florida	June	398	135,530	21,629	175,081	32,189	37,611	2,003	74,519	151,710	86.7	23,371	7,333	26	—22,929
	6 mos.	398	813,903	276,510	1,214,738	192,310	212,933	10,510	508,233	970,047	79.9	244,691	146,985	70,055	—37,601
New Orleans & Northeastern	June	204	198,632	21,564	238,529	36,487	35,976	5,632	72,061	161,991	67.9	76,538	43,076	18,898	33,256
	6 mos.	204	1,229,934	91,349	1,434,146	195,029	212,208	32,990	436,912	947,317	66.1	486,829	298,353	161,594	102,358
Northern Alabama	June	100	42,831	1,121	45,887	10,466	1,214	1,150	15,606	30,196	65.8	15,691	9,850	1,102	—14,023
	6 mos.	100	288,208	5,732	304,865	66,769	7,836	6,165	97,096	188,620	61.9	116,245	81,450	31,817	—24,823
Southern Pacific	June	8,658	11,223,280	2,294,050	14,906,140	1,342,179	2,430,152	375,288	5,047,030	10,047,195	67.4	4,858,945	3,682,551	2,694,399	1,327,610
	6 mos.	8,657	58,653,612	10,083,560	75,624,130	7,821,575	14,084,637	2,151,897	28,460,459	57,240,262	75.7	18,383,868	11,344,342	7,152,345	—541,959
Southern Pacific Steamship Lines	June	....	531,155	57,354	624,807	17,810	104,418	19,558	408,280	564,542	90.4	60,265	43,153	42,926	—5,154
	6 mos.	....	3,225,052	187,821	3,594,414	85,637	629,392	110,663	2,396,439	3,315,811	92.2	278,603	181,951	180,731	—190,793
Texas & New Orleans	June	4,416	2,655,059	323,349	3,301,575	524,397	605,688	125,178	1,174,455	2,637,738	79.9	663,837	375,129	122,458	113,816
	6 mos.	4,416	17,485,573	1,590,150	20,832,128	3,150,995	3,541,968	751,310	7,218,166	15,907,630	76.4	4,924,498	3,149,155	1,762,517	759,294
Spokane, Portland & Seattle	June	948	629,874	53,641	740,634	171,618	99,744	11,274	254,554	566,590	76.5	174,044	102,283	62,235	—1,722
	6 mos.	948	3,501,621	199,460	4,024,339	888,257	548,167	59,725	1,474,964	3,138,693	78.0	885,646	447,210	163,247	44,815
Tennessee Central	June	286	155,373	4,943	171,473	37,196	26,427	6,234	66,917	147,175	85.8	24,298	12,426	—734	—3,601
	6 mos.	286	1,029,222	24,805	1,122,951	207,445	179,473	38,074	414,363	899,228	80.1	223,723	151,425	54,277	31,743
Texas & Pacific	June	1,936	1,655,798	197,024	2,027,480	311,336	429,268	73,983	731,175	1,655,668	81.7	371,812	220,487	116,413	417,896
	6 mos.	1,936	10,423,793	1,077,951	12,549,087	1,472,073	2,483,076	434,113	4,162,851	9,236,359	73.6	3,312,728	2,402,224	1,752,648	1,977,605
Texas Mexican	June	162	48,995	255	61,661	10,600	7,844	2,923	31,888	58,644	95.1	3,017	—2,718	—5,560	—2,993
	6 mos.	162	434,167	2,551	507,956	67,000	66,660	17,981	198,602	383,152	75.4	124,804	89,323	65,599	47,876
Toledo, Peoria & Western	June	239	175,592	.....	178,399	45,572	17,276	15,968	40,310	131,275	73.6	47,124	33,394	18,550	17,611
	6 mos.	239	1,004,016	58	1,018,030	231,629	86,884	96,185	243,557	725,173	71.2	292,857	201,188	118,848	111,729
Union Pacific System	June	9,899	9,749,832	1,979,265	12,999,241	2,219,535	2,636,041	490,761	4,373,835	10,559,035	81.2	2,440,206	1,127,688	438,388	818,020
	6 mos.	9,902	57,487,711	7,984,532	72,007,702	7,786,000	14,910,900	2,603,365	25,870,614	55,621,563	77.2	16,386,139	8,611,861	4,490,907	3,853,117
Utah	June	111	25,684	.....	25,756	8,818	14,693	348	8,756	36,490	141.7	—10,734	—14,979	—13,054	—9,234
	6 mos.	111	335,818	.....	337,035	53,827	122,969	2,574	95,916	298,558	88.6	38,477	—12,067	4,649	—61,061
Virginian	June	638	1,854,090	2,809	1,903,829	164,248	383,520	23,407	250,326	853,368	44.8	1,050,461	780,461	788,549	583,480
	6 mos.	638	9,076,865	15,416	9,324,326	892,208	2,089,732	138,939	1,406,670	4,720,750	50.6	4,603,576	3,238,576	3,423,363	3,352,543
Wabash	June	2,410	2,874,430	210,728	3,336,585	507,056	567,201	148,976	1,382,747	2,756,457	82.6	580,128	361,840	1,952	26,283
	6 mos.	2,410	18,070,283	1,134,035	20,688,105	2,716,339	3,675,181	887,262	8,505,000	16,705,855	80.8	3,982,250	2,674,383	508,490	—587,715
Ann Arbor	June	294	287,540	4,219	306,091	29,309	59,574	13,074	134,664	248,661	81.2	57,430	35,506	25,359	8,557
	6 mos.	294	1,739,618	15,567	1,812,472	172,996	393,773	78,080	863,867	1,580,590	87.2	231,882	105,395	21,806	—41,931
Western Maryland	June	878	1,130,394	6,647	1,166,238	137,039	243,330	38,863	333,633	798,259	68.4	367,979	302,979	311,665	164,949
	6 mos.	878	6,831,100	34,826	7,084,121	794,870	1,608,336	234,392	2,090,544	5,009,313	70.7	2,074,808	1,659,808	1,681,249	1,379,175
Western Pacific	June	1,208	1,199,685	89,610	1,339,526	251,129	249,362	70,248	523,416	1,155,333	86.2	184,193	98,843	40,802	—177,500
	6 mos.	1,208	6,599,938	223,348	6,998,405	1,236,978	1,478,428	360,578	2,874,323	6,283,411	89.8	714,994	217,067	—148,822	—2,004,034
Wheeling & Lake Erie	June	508	1,063,689	27	1,131,307	135,235	240,017	34,151	339,059	779,253	68.9	352,054	218,550	280,102	182,027
	6 mos.	508	5,747,181	27	5,996,503	695,210	1,350,445	211,516	1,963,983	4,399,001	73.4	1,597,502	882,153	1,255,253	557,238